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TRAVELS IN THE HIMALAYAS.*

Up in the Himalayas! Thither are we carried by the books now before us; two of them old acquaintances, the other two graphic narratives recently published. Seated in our arm-chair, turning over the leaves, and looking at the engravings, colored and uncolored, which profusely illustrate the narratives, we are mentally borne away into the far East, to the vast panorama of mountains which form the southern boundary of the unexplored heart of Asia, and the most elevated region on the face of the globe. We make journeys of

several thousand miles, up in the clouds, in a region half-way between earth and sky, along routes ranging from eight to eighteen hundred * feet above the level of the sea—sojourning on uplands higher than the summit of Mont Blanc, and crossing the loftiest mountain-passes in the world. In graphic outline there passes before us the singular and novel aspect of the region—with its praying-wheels ceaselessly uttering, as it were, the same formula of adoration, its dagobas and other monuments to Buddhist saints, its long walls composed of votive slabs covered with inscriptions, its stolid priests and simple people; we behold the sublime scenery, in some parts bleak and barren, in others clothed with unbroken forests far

* *Diary of a Pedestrian in Cashmere and Thibet.* By Captain KNIGHT. London. 1863.

Travels in Ladak, Tartary, and Kashmir. By Lieut.-Colonel TORRENS. London. 1862.

Himalayan Journals. By J. D. HOOKER, M.D., F.R.S. New Edition. London. 1855.

Ladak, Physical, Statistical, and Historical. By ALEXANDER CUNNINGHAM. London. 1854.

* Thousand was doubtless meant instead of hundred.—EDITOR OF THE ECLECTIC.

as the eye can reach, and visit the snowy wastes of the Upper Himalayas, with its piercing winds and almost perennial winter—without stirring out of our easy-chair, and within a comfortable distance of our own fireside. This is the happy privilege of modern times, when men “run to and fro on the earth,” with pen and pencil in hand, and bring the fruit of their travels in diaries and sketch-books for the instruction and enjoyment of their countrymen at home.

The spirit of travel and adventure, the search for health, and the pioneering of commerce, have all been combining of late years to make us acquainted with the aspects and topography of the broad belt of gigantic mountains and deep interesting valleys which forms the northern boundary of our Indian empire. Parched and “used up” with the torrid heat of the dusty plains of Hindostan, our officers and civilians, whenever they get a few months’ leave of absence, hurry off to the snowy region of the Himalayas, to cool themselves amidst its icy wastes, to take rest amidst the evergreen woods of Simla and Darjeeling, to luxuriate in the lovely valley of Cashmere, or to penetrate into the wilds of Ladak and Thibet. The scientific adventurer turns his steps in the same direction, to botanize, geologize, or explore. Not content to believe that the Ganges falls straight down from heaven upon the head of Siva, wandering amidst his tangled locks before it descends into the Indian plains, government surveyors are traversing and mapping the mountain region with trigonometrical precision; and if Keilas, the paradise of Siva, have a local habitation, as it certainly has a name, the “Compass Wallahs” will indubitably find it out, and make a plan of it for the benefit of the faithful in the plains below. Commerce, too, has its interests even in that inhospitable region. A new road, first projected by Lord Dalhousie, has been constructed from Simla across the mountains to the Chinese frontier, to facilitate the growing trade by that direct route into India; and one of the objects which Lord Elgin sought to accomplish by his contemplated interview with the Rajah of Cashmere was to induce, if not compel, that potentate to remove the existing obstructions to the traffic between the Punjab and the countries of Upper Asia. Where commerce goes, influence follows;

and political considerations are not absent in this effort to establish commercial relations with the population of a region which at present is more open to the commerce of Russia than to ours.

The climate is driving the Anglo-Indians into the Himalayas. If we are to maintain our position as masters of India, we must have sanatoria for our army and government officers near at hand; and we must increase our numerical strength by attracting a new influx of British settlers, which can only be accomplished by opening for them suitable fields of industrial enterprise. This latter object is beginning to be attained by the cultivation of the tea-plant, which is attracting settlers into the valleys of the Himalayas, where large plantations begin to cover the mountain-slopes in some parts; and in proportion as these districts become cleared, and cultivated, and rendered attractive to English settlers, the number of immigrants will increase—at once augmenting the prosperity of our Indian empire, and forming a reserve population, which in any future crisis will be capable of lending a most valuable support to the government, alike in arms and by means of their influence with the surrounding population. Of sanatoria, as yet, we have too few; and it is to be regretted that, when ceding the Terai to the Nepalese government, we did not stipulate in return for the cession of some one of the many spots on the Nepalese frontier which are suitable sites for sanatoria. Simla, in the center of the line of the Himalayas, and Darjeeling, in the eastern part of the range, three hundred and fifty miles due north of Calcutta, are the only localities as yet established as sanatoria. Cashmere, at the western extremity of the Himalayas, is a third locality frequented by Anglo-Indians for the sake of health and recreation, although it is not included in the British possessions. These three points are the portals through which our travelers and tourists enter the Himalayan region. As the territories of Nepal extend all the way between Darjeeling and Simla, the route through the mountains between these two points is not attempted by English tourists, and the topography of the country is almost unknown; but westward of Simla the country is open to our passage, and within the last few years journeys and exploring expeditions have frequently been made by our countrymen from Simla north-west-

ward through the mountains into Ladak, and back by Cashmere, and *vice versa*; the route, speaking roughly, forming a half-circle, with Simla at one extremity and Cashmere at the other. It is the region lying along this route which is described in the narratives of Cunningham, Torrens, and Knight. Dr. Hooker, on the other hand, started from Darjeeling, and his interesting tours extended through the portion of the Himalayas included in the native State of Sikkim, which lies to the north of Darjeeling, between Nepal on the east and Bhotan on the west, and through which he made his way to the frontier of Tibet.

Along the base of the eastern portion of the Himalayas lies the malarious jungle of the Terai, forming a belt thirty miles in breadth on the northern frontier of Oudh, but narrowing as it extends westward till it disappears as the longitude of Simla is reached, and diminishing to a breadth of ten miles in its eastern portion as it passes to the south of Darjeeling. The only people who can live in it are the indigenous Mechis—belonging to the Indo-Chinese stock—whose disagreeably sallow complexion seems to indicate a sickly constitution, although Dr. Hooker affirms that they are more robust than Europeans in India. But to all other tribes, whether of India or of the Himalayas, the climate of the Terai is death; and it was in passing through this belt of jungle, on her return from Darjeeling to Calcutta, that Lady Canning caught the fever which so suddenly cut her off in the prime of life. It is curious to find that the inhospitable zone which thus fringes the southern base of the Himalayas conceals beneath its long grasses and bushy thickets a stony and gravelly surface, which bears indubitable marks of having once, in some remote geological period, been a sea-margin, when the Bay of Bengal washed the base of the Himalayas as far inland as Hurdwar. The district is intersected by innumerable rivulets from the hills, which unite and divide again on the flat, branching in all directions through the jungle belt.

The eastern Himalayas are so shrouded by dense wreaths of vapor that a traveler may arrive within eight or nine miles of them before he catches a glimpse of the outer range—somber masses of unpicturesque outline, clothed every where with a dusky forest. The vapor, borne by the

breezes from the Indian Ocean, rarefied and suspended aloft, passes unseen over the heated plains, but is condensed into a drizzle when it strikes the cool flanks of the mountain, and into heavy rain when it reaches their colder summits. On entering the Terai every feature of the district, botanical, geological, and zoölogical, is new; and by a sudden and clearly marked transition, we pass from the vegetation of the plains to that of the Himalayas. Immediately beyond the Terai the ascent becomes steep, and a giant forest replaces the stunted bushy timber of the Terai. At Punkabaree, the first stage up the mountains on the road to Darjeeling, the view becomes superb. In front, the Himalayas rise in steep confused masses; all around are hills five or six thousand feet in height, clothed with a dense deep-green dripping forest, through which torrents rush down in deep ravines; while below, thickly wooded spurs stretch down into the plains, inclosing broad, dead, flat, hot, and damp valleys; and the horizon is bounded by the sea-like expanse of the plains, which stretch away into the region of sunshine and fine weather, in one boundless flat. Surmounting the narrow saddle of the Sinchul Mountain, (seven thousand three hundred feet in height,) the traveler loses sight of the plains, and descending a short way along a wooded spur of the mountain running northwards he arrives at Darjeeling, which stands about seven thousand feet above sea-level. The outer ridge of the Himalaya has now been passed, and the inner base, or amphitheater, opens to view. The loftiest summits of the Himalayas—in other words, the highest mountains in the world—are visible from Darjeeling, and the position of the sanatorium is itself very picturesque. The valleys on either side are at least six thousand feet deep, forest-clad to the bottom, where flows the great Rungeet river, up whose course the eye is carried to the base of the snowy mountains. From Darjeeling—or still better, from the top of Sinchul, which is a favorite excursion of the residents—looking northwards, at least twenty peaks are visible which rise above twenty thousand feet. Kinchinjunga, forty-five miles distant to the north, rises to the altitude of twenty-eight thousand one hundred and seventy-eight feet; Donkia (twenty-three thousand one hundred and seventy-six feet) and Chumulari (twenty-three thou-

sand nine hundred and twenty-nine feet) appear to the north-east at the distance of seventy-three and eighty-four miles respectively; while to the north-west, at upwards of one hundred miles distance, a beautiful group of snowy mountains rises above the black Singalelah range, the chief of which is probably as high as Kinchinjunga. In summer time the perpetual snow forms a girdle, or crest, of frosted silver, extending over nearly one fourth part of the horizon, or an arc of eighty degrees, at Darjeeling; and in winter, when the mountains are covered down to eight thousand feet, this white ridge stretches uninterruptedly for more than one hundred and sixty degrees, or over nearly the whole northern half of the horizon.

Though a sanatorium for the Anglo-Indians, Darjeeling is no paradise for the Bengalees who come to it in attendance upon their invalid Sahibs. The fabled paradise of their religion may be placed among the icy summits of the Himalayas, but while in the body they show no liking even for the lower altitudes of the mountains. With the prejudices so characteristic of their race, they continue their vegetable diet and the thin dress suitable for the torrid plains, and sleep as usual on the bare ground, so that sharp fevers and ague frequently attack them. Even European invalids often rail at the climate of the place—what will invalids not rail at?—though visibly improving under its influence.

"Children's faces," says Dr. Hooker, "afford as good an index as any to the healthfulness of a climate, and in no part of the world is there a more active, rosy, and bright young community than at Darjeeling. It is incredible what a few weeks of that mountain air will do for the Indian-born children of European parents; they are taken there sickly, pallid or yellow, soft and flabby, to become transformed into models of rude health and activity."

The temperature is only a little warmer than that of England, and with milder extremes. The moisture of the climate is not suited for invalids who suffer from dysentery, and bowel and liver complaints of long standing; but cholera is unknown in the place, and when imported never spreads. Loungers and sportsmen mope at Darjeeling, for it is not the place for them; they ought to go to Simla, or, better still, to Cashmere. It is remarkable, as showing the nature of the climate, that

although the general temperature of the year is somewhat above that of England, none of the fruit-bearing plants and trees of our country can be cultivated with success, except the walnut and the strawberry, which are indigenous, and thrive excellently. The European apple will scarcely ripen, the pear not at all; and the currant and gooseberry are equally unable to thrive. The cause of this dearth of fruit throughout the eastern Himalayas is the singular and almost total absence of the direct rays of the sun during the ripening season, which are intercepted by the humidity of the atmosphere. European vegetables, on the other hand, thrive remarkably well at Darjeeling, and the produce is good, although somewhat inferior in flavor to the English plants.

Nowhere are the Himalayas broken up into such a network of high ridges and profound valleys as in the region adjoining Darjeeling. Traveling is rendered laborious by ceaseless ascents and descents, frequently of six thousand or nine thousand feet. This configuration greatly increases the surface of the country, and that the soil and climate are extremely favorable to vegetation is shown by the gigantic forests and rich verdure which cover the mountain sides. Oaks, chestnut, maples, walnut, birch, and laurels, are the principal features of the forest, while the paths abound in rare and beautiful plants. In the months of April and May, when the magnolias and rhododendrons are in blossom, the gorgeous vegetation is hardly to be surpassed by any thing in the Tropics, although the effect is marred by the prevailing gloom of the weather. Nothing can exceed in beauty the great Rhododendron Argenteum, with its wide-spreading foliage and glorious mass of flowers, which here grows as a tree forty feet high, with magnificent leaves twelve to fifteen inches long; and the white-flowered magnolia, which is the predominant tree at an altitude of seven thousand to eight thousand feet, sometimes blossoms so profusely that the sides of the mountains appear as if sprinkled with snow. The valleys formed by the rivers are generally very narrow and steep, although there are hardly any precipices or bare surfaces. The natives clear small "locations" for themselves by setting fire to the jungle, especially on the lower spurs; after which they clear away the trees, and cultivate between the stumps. In the month of

May the firing of the jungle is a frequent practice; and Dr. Hooker, who was at Darjeeling at this season, thus describes the spectacle:

"Heavy clouds canopy the mountains above, and, stretching across the valleys, shut out the firmament; the air is a dead calm—as usual in these deep gorges—and the fires, invisible by day, are seen raging all around, appearing to an inexperienced eye in all but dangerous proximity. The voices of birds and insects being hushed, nothing is audible but the harsh roar of the rivers, and occasionally rising far above it, that of the forest fires. At night we were literally surrounded by them; some smouldering, like shale-heaps at a colliery; others fitfully bursting forth; whilst others again stalked along with a steadily increasing and enlarging flame, shooting out great tongues of fire, which spared nothing as they advanced with irresistible might. Their triumph is in reaching a great bamboo clump, when the noise of the flames drowns that of the torrents; and as the great stem-joints burst, from the expansion of the confined air, the report is as that of a salvo from a park of artillery. At Darjeeling the blaze is visible; and the deadened reports of the bamboos bursting are heard throughout the night; but in the valleys, and within a mile of the scene of destruction, the effect is the most grand, being heightened by the glare reflected from the masses of mist which hover above."

Sikkim, on the southern edge of which stands Darjeeling, is a small territory, barely sixty miles in breadth, extending northward to the crest of the snowy range which forms the southern frontier of Thibet. But small as the territory is, its population—as is not seldom the case in mountain regions—is remarkably heterogeneous. The aboriginal inhabitant of the country, and the prominent character in Darjeeling, where he undertakes all sorts of out-door employment, is the Lepcha. He is Mongolian in features, and a good deal, too, in habit and language; still he differs considerably from the Thibetans, though not so decidedly as from the Nepaulese and Bhotanees, who are his neighbors on the west and east. He is short in stature, being hardly five feet in height; rather broad in the chest, with muscular arms and powerful legs, but with small hands and slender wrists. The women, though with no pretensions to good looks, have a mild, frank, and rather pleasing expression; the girls, especially, are often engaging to look upon—all smiles and good nature; but the old women are thorough hags. Though fond of bathing

when they come to a stream in hot weather, and expert swimmers, the Lepchas never take to the water for the purpose of ablution. Their dress is a single cotton vestment, thrown loosely round the body, leaving one or both arms free, and reaching to the knees; to this, in cold weather, is added a loose jacket with wide sleeves. Their ornaments are silver hoops in the ears, necklaces of cornelian and other stones or coral, and curious amulets or charm-boxes of gold and silver, attached to their necks or arms. They take some pride in their hair also, which the ladies frequently dress for the gentlemen: thus one may often see, the last thing at night, a damsel of discreet port, demurely go behind a young man, unplait his pigtail, tease the hair, thin it of some of its lively inmates, braid it up for him, and retire. The women wear two braided pigtails, by which a stranger most readily distinguishes them from their effeminate-looking partners; and when in full dress, with a small woolen cloak of gay pattern thrown over the ordinary dress, their costume is very picturesque. This people profess no religion, but acknowledge the existence of good and bad spirits. To the good they pay no heed. "Why should we?" they say; "the good spirits do us no harm; the evil spirits, who dwell in every rock, grove, and mountain, are constantly at mischief, and to them we must pray, for they hurt us." All bodily ailments are deemed the operations of demons, who can be cast out by prayers and invocations; and every tribe has a priest-doctor, who officiates as an exorcist. Although a mountaineer, the Lepcha is timid, peaceful, and no brawler—qualities which contrast strongly with those of his neighbors to the east and west. He is an incomparable attendant on the march—sleeping on the cold, bleak mountains, exposed to pelting rain, without a murmur, and ever ready to give a helping hand. Arrived at the end of a march, the Lepchas will sit for hours chatting, telling stories, singing in a monotonous tone, or playing on their only musical instrument—a long bamboo flute. Most Europeans maintain that the music of India is nothing better than disagreeable noises; but Dr. Hooker used to relish the music of his Lepcha attendants.

"I have often listened," he says, "with real pleasure to the simple music of this rude in-

strument; its low and sweet tones are singularly *Æolian*, as are the airs usually played, which fall by octaves; the sound seems to harmonize with the solitude of the primeval forests; and he must have a dull ear who can not draw from it the indication of a contented mind, whether he may relish its soft musical notes or not."

The skill of the Lepchas as woodsmen is invaluable to the traveler whom they attend; for in an hour's time they will build a water-proof house, thatched with banana-leaves in the lower regions, and with bamboo in the higher, and furnish it with a table and bedstead for three persons, using no other implement than their heavy knife.

Attended by a party of these Lepchas acting as coolies, Dr. Hooker journeyed to and fro among the mountains of Sikkim, crossing torrents and swift-running rivers on cane bridges of perilous slenderness; toiling through profound valleys, where the mountain sides are so steep that one must scramble rather than walk; till, as he proceeded northwards, the vegetation grows scanty, the prevailing color of the scene is a burnt-brown, glaciers fill the adjoining glens, ancient morasses are spread over the narrow plains; and while dark clouds and drizzling rain surround the upward-journeying traveler, he sees ahead of him, between the ice-capped mountain portals, the arch of ever-blue sky which overhangs the rainless tableland of Thibet. Even in the lower part of Sikkim, where the soil is abundantly fertile, the population is very scanty, and so indolent that they hardly raise food enough to keep themselves alive; so that it is no easy matter for the traveler to obtain supplies either of coolies or rations. Pheasants may be snared occasionally in the upper regions, and there are the wild sheep of the Himalayas, (the *ovis ammon*,) as tall as a calf, and with enormous spiral horns, which the sportsman may bag if he can. A beer, made by pouring boiling water over millet, upon which the natives often get fuddled, is sometimes presented to the traveler—and sometimes tea, not infused as with us, but *churned*, with soda, salt, and butter, sometimes (at least in the western Himalayas) even with flour and vegetables, so as to form a kind of soup. In the upper valleys the natives in some places abandon their little hamlets during the winter, seeking refuge lower down; and over all the alpine region, af-

ter gathering in fire-wood and storing their little grain-crop on the roof, the people shut themselves in, and hybernate until the return of spring. Parties of Thibetans are met with in the roads and passes, journeying in families and in single file, laden with salt from the interior—every one, down to the youngest that can walk, carrying a bag or bags in proportion to his or her size, and the shaggy yaks and grave bull-dog-headed mastiff being similarly burdened. They smoke tobacco or dried leaves in brass pipes, warranted not to break, and sometimes improved by having an agate or amber mouth-piece.

The symbols and priests of Buddhism are met with every where in Sikkim. Heaps of stones, or cairns, at conspicuous points on the wayside, are surmounted with poles, bearing bits of cloth or rags like flags, inscribed with the all-pervading formula of adoration, "Om mani padmi hom!"—which is also the only answer to his interrogatories which greets the passing traveler from the lips of the stolid priests. But Buddhism is in no wise exclusive; a stranger may at all times enter their temples and witness their worship. On festival days the natives bring offerings and place them on the altar; and the Lamas may be seen at prayer, psalms, and contemplation, seated cross-legged on benches—one reading, perhaps, with his forefinger elevated, while the others listen: anon they all sing hymns, repeat sacred or silly precepts to the bystanders, or join in a chorus with boys, who strike brass cymbals, and blow long straight trumpets, or carved and silver-mounted conch-shells, making a fearful din. Drums, gongs, praying-cylinders, books, and trumpets made of thigh-bones, (which once formed the tibia of a Lama,) with cups and other articles on the altar, and gayly-colored idols and flags, constitute the rest of the furnishing. The convents in Sikkim are so numerous that each morning at daybreak the traveler is aroused by this wild music, effectually awakening him to the strangeness of the wild land in which he is wandering.

It is remarkable that snow lies more heavily on the middle ranges of Himalayas than on the northern. The level of perpetual snow, of course, comes lower down on the northern ranges than on the southern, and the vegetation is always more abundant on the slopes which face the south; nevertheless, it is a fact that

the more northerly chains of the Himalayas, and still more, the mountains of Thibet, are freer of snow than the chains which lie nearer to India. The explanation is, not that the climate further inland is less cold—on the contrary, it is colder—but that it is remarkably dry; whereas the climate of the southern ranges of the eastern Himalayas is remarkably moist. There is very little moisture to congeal on the Himalayas which adjoin Thibet, and hence the snow-fall is comparatively light. The bare rocks and immense boulder-stones which strew the upland valleys absorb, and afterwards radiate, the sun-heat in a remarkable manner; and the natives, at night, always bivouac, if possible, under the lee of one of those heated masses. Dr. Hooker was surprised to see vegetation flourishing at very great elevations (seventeen thousand feet,) but on burying his thermometer he found that the mean temperature of the earth was several degrees warmer than that of the atmosphere, (at Yeumtso, sixteen thousand eight hundred feet above the sea, it was twelve and three-quarter degrees warmer than the air,) a fact which, in a lesser degree, he says, holds good all over India. Another curious phenomenon observed by Dr. Hooker was that the temperature of the Zemu river, which flows southward through the Himalayas from Thibet, was six degrees warmer than that of the Thlonok river at the point of confluence, and that as he proceeded northwards up the Zemu, its waters grew warmer and warmer, rising from forty to forty-eight degrees at one thousand feet higher, and at twenty-two hundred feet higher it was forty-nine degrees, proving that it rose in a dryer and comparatively sunny climate, and, before descending into the Himalayas, flowed amongst mountains that were little snowed.

In the western Himalayas, glaciers descend to within eleven thousand feet of the sea level, but in the Sikkim or eastern portion of the mountains they are hardly to be met with so low as fourteen thousand feet, though extensive snow-beds remain unmelted in the summer months at but little above ten thousand feet. Some of the passes surmounted by Dr. Hooker were seventeen thousand feet in altitude, and even at lesser heights the scenery presented some of the grandest aspects to be met with in the world. The steepness of the mountain-slopes, the abruptness with

which the ice-topped summits ascend from the intervening valleys, is one of the peculiar features of the eastern Himalayas. In the Kambachen valley, close to the northern frontier of Sikkim, this feature is remarkably displayed. The valley, which is eleven thousand four hundred feet above the sea, lies between two mountains, the one twenty-five thousand three hundred and twelve feet high, the other nineteen thousand feet, yet the summits of these mountains are only eight miles apart! The summit of the higher of these two mountains rises nearly fourteen thousand feet above the valley, yet is not more than five miles distant in a straight line. This is a much steeper slope than that from the valley of Chamouni to the top of Mont Blanc. The Yangna valley, thirteen thousand five hundred feet above the sea, may be taken as a sample of the scenery prevailing in these high altitudes. By the labor of man, the soil is made to yield little crops of barley, wheat, potatoes, turnips, and radishes, which are cultivated as summer crops, grown in small fields cleared of stones and protected by dykes; and some of these little crops are even grown four hundred feet higher. But the surrounding scenery is bare and dismal, not even the juniper bush attaining to this elevation. The ancient lake-beds in the valley, green or brown with scanty vegetation, are bordered by vast morasses, and covered by enormous boulders, shot down by ancient glaciers; flat terraces, like parallel roads, (marking ancient lake margins) extend along the bluff sides of the mountains; while numbers of snowy peaks and glaciers rise all around the elevated horizon. Add to this the little Buddhist monuments of quaint picturesque shapes, decorated with poles and banners; the many-colored dresses of the people; the brilliant blue of the cloudless heavens by day, and the depth of its blackness by night, heightened by the light of stars that blaze with a luster unknown in less lofty regions—and we have a scenery singularly impressive, even though the effect were not heightened by the silence that reigns around. Snow covers the ground at Yangna from December till April, and the falls at times amount to twelve feet in depth. Dr. Hooker, who passed through the valley in December, just before the snows set in, thus describes the scene;

“The village—a miserable collection of two

hundred or three hundred stone huts, nestling under the steep flank of a lofty terrace laden with gigantic bowlders—seemed buried in repose. The inhabitants had begun to hibernate; their crops were stored, the curd made and dried, the passes closed, the soil frozen, the winter's stock of fuel housed, and the people had retired into the caverns of their half-subterranean houses, to sleep, spin wool, and think of Booddh, if of any thing at all, the dead-long winter through. The yáks alone find any thing to do; so long as any vegetation remains they roam and eat it, still yielding milk, which the women take morning and evening, when their shrill whistle and cries are heard for a few minutes as they call the grunting animals. No other sounds, save the harsh roar and hollow echo of the falling rock, glacier, or snow-bed, disturbed the perfect silence of the day and night."

Still grander was the panorama which opened upon Dr. Hooker from the most northerly passes of the Snowy Himalayas, on the northern frontier of Sikkim, and commanding a view of the lofty table-land of Thibet. The mountains which rise from that table-land do not appear to be quite so lofty as some of the Snowy Himalayas, but the average altitude of the country is very much higher—no part of it, Dr. Hooker thinks, being less than eighteen thousand feet above the sea. From the summit of Mount Bhomteo, he took a Pisgah view of this rainless, sterile, and little known region. Below, a few miles off, lay the broad sandy valley of the Aran; for thirty miles north not a particle of snow was to be seen; beyond that, rugged purple-flanked and snowy-topped mountains girdled the horizon—some of them being sixty or eighty miles off, to the north of the valley of the Yaru river, which is believed to be the upper part of the great Burrampooter. No village, not even a house, was to be seen throughout the extensive area over which the eye roams from Bhomteo. Every where the landscape was desolate and barren. The wild ass grazing with its foal on the sloping downs, the hare bounding over the stony soil, the antelope scouring the sandy flats, and the fox stealing along to his burrow, were the desert and Tartarian types of animal creation which met the view. The shrill whistle of the marmot alone breaks the profound silence, recalling to mind the snows of Lapland; while the kite and the raven wheel through the air; and still higher in the pale blue transparent sky "long black

V-shaped trains of wild geese cleave the air, shooting over the glacier-crowned top of Kinebinjhow, and winging their flight in one day, perhaps, from the Yaru to the Ganges, over five hundred miles of space, and through twenty-two thousand feet of elevation." Every night Dr. Hooker spent in Thibet he witnessed a magnificent display of sunbeams, converging to the east, and making a false sunset. "As the sun set, broad purple beams rose from a dark low leaden bank on the eastern horizon, and spreading up to the zenith, covered the intervening space: they remained from fifteen to twenty minutes, fading gradually into the blackness of night." He looked in vain, however, for the beautiful lancet-beam of the zodiacal light; its position, he says, being hid by a neighboring mountain peak.

Let us now turn to Simla, seated on its pine-topped ridges, with its evergreen woods and bosky dells and bright blossoming flowers—an asylum of health and delight to the Anglo-Indian from the plains; and from it as a starting point let us accompany Lord William Hay and his party on their tour through the western half of the Himalayas. Colonel Torrens is the chronicler of the expedition, and he wields the pen, and still more the pencil, with graphic skill to describe the features of the journey. Starting from Simla, eight thousand feet above the sea, they soon obtain an excellent view of the snowy peaks of the first great range of the Himalayas, which in this quarter forms the northern boundary of the monsoons and rains. Their route at first lay along the new road from India to Thibet—an admirable piece of engineering—sometimes winding round fearful precipices, where the road is formed by wooden viaducts; in other places it is cut through the solid rock, or through tunnels in the mountain side, or else built upon masses of substantial masonry. So skillfully is it led round the spurs of the mountains that the road is nearly level all the way—in striking contrast to the old road, which goes straight up hill and down dale, the traveler having to scramble up and down rude stairs of rough stone or blocks of wood, and goats being employed to carry the merchandise, as the route is impassable for horses. The new road has not yet been completed to Chini, its terminus on the Chinese frontier; but the delightfulness of the climate

at Chini, and the great beauty of the surrounding scenery, are such as amply to repay the tourist who visits it. It was a favorite residence of Lord Dalhousie, whose bungalow still stands, and has recently been repaired. Lady Canning also visited the place in her sketching tour. A friend of ours who sojourned there for a couple of months says he knows no more charming spot in the world. It is two hundred miles within the Himalayas, but the people are still in the main Hindoos—with one important exception, that they wash and bathe themselves only twice in a year! Our friend was present on one of these great occasions, when a *pooja*, or religious festival, was held in honor of the event. Strolling in the afternoon through the pleasant woods, he came upon a very quaint sight. A party of the village girls were lying on their faces in a ring, with their heads in the center, and their bodies radiating outwards like the spokes of a wheel. They were laughing and talking, and now and then a puff of smoke curled upwards from the midst of them. Catching sight of our friend, they hurriedly rose and made off; and on approaching the spot, he found that they had been smoking in the most primitive way possible. The mode is not uncommon in this part of the Himalayas, and consists in pushing the two forefingers through the pliant soil till the points meet: tobacco is then placed at the one hole and the lips at the other, and so they do smoke! In truth, smoking is practiced in curious fashions all over the Himalayas. The pipes of the common people are generally of metal, and therefore not liable to break. Captain Knight found at a halting-place a piece of rough clay fashioned with the thumb into a pipe-bowl, and placed in a cleft of a tree at a convenient height as a convenience for all comers. Into this rough bowl the traveler fits a straw, and filling in tobacco, solaces himself with a smoke. Despite the difficulties which attend an indulgence in the narcotic weed in these Alpine regions, the practice is so general that it is made a measure of distance; and if you ask a *puharie*, or hillman, how far it is to any place, he will answer that "it is so many smokes!"

Lord W. Hay's party did not proceed all the way to Chini. Leaving the New Road a few miles beyond Narkundah, they made a steep descent into the valley of the Sutlej at Kotghur—passing the

night in the bungalow of a Mr. Berkeley, a tea-planter, who possesses a considerable tract of country, and whom the government has endowed with magisterial powers, which he exercises most judiciously. Crossing the Sutlej by a noble bridge of deodar pine, they surmount a minor range of the mountains, and descend into the valley of the Beas, another of the rivers of the Punjab, and ascend the stream to its source on the summit of the Rotang Pass, thirteen thousand feet above the sea. Again descending, they strike the upper waters of the Chenab, and follow the narrowing valley upwards, crossing streams on bridges of snow or ice, till they reach the summit of the Bara Lacha Pass, sixteen thousand five hundred feet in elevation. This range forms the water-shed which separates the mountain-valley of the Indus from those of the other rivers of the Punjab, which lie more to the south. Beyond the Bara Lacha the rivers flow in northerly or north-westerly courses towards the Indus. But the route keeps at a high altitude, passing through a region where the black tents of the nomads take the place of villages, until it reaches its highest point at the Tung-lung Pass, eighteen thousand feet above the sea, (three thousand feet higher than Mont Blanc,) from whence the traveler overlooks the defiles which lead down to the valley of the Indus. Two marches brought them to the Indus, here flowing nearly twelve thousand feet above the sea; and in two more days they arrived at Leh, the capital of Ladak, after a fatiguing journey of four hundred miles from Simla. Pursuing their route, they soon quit the valley of the Indus, and journey for several days through the mountains to the valley of the Dras river, which they ascend to the Bultul Pass, in a continuation of the lofty Bara Lacha range, which here forms the northern boundary of the lovely vale of Cashmere.

From the time these tourists leave the tea-farm of Mr. Berkeley, overlooking the rapid mud-colored flood of the Sutlej, we follow their route with ever-increasing interest. We feel their headaches as they pass through the close atmosphere and rank vegetation of the Sutlej valley, and their vertigo and respiratory oppression as they surmount the lofty passes of the Bara Lacha and Tung-lung ranges. The very bridges on the route are trying to the nerves, if not actually perilous. Some

of them are rude suspension-bridges made of birchen twigs, about a yard wide, with frail twig parapets hardly three feet in height: others are a sort of ferry suspension bridge, consisting of ropes stretched across, with sliding ropes hanging down, in which the passenger is fixed, and then drawn across. Nor must we forget the *deris*, or inflated bullock-skins, which serve as ferry-boats on the unbridged and unfordable parts of the rivers. We come into a region where the customs and costumes of China and Tartary supplant those of India; where we find the monasteries, nunneries, and religious rites of Buddhism mingling with the more native Lamaism of Thibet. Here we find women with many husbands; it being customary for all the sons of the same mother to have but one wife among them; and these women, also, literally wear the breeches, though these be of silk. Partridges, snow-pheasants, deer, and bears, are met with at times, to give work to the sportsman; and we may add, for the benefit of Nimrods who may intend to visit those parts, that there is quite a warren of brown bears as you cross the mountain-pass from the valley of the Dras into Cashmere.

Of all the parts of the route, that which, after closing the book, remains most clearly in our mind's eye, is the great Kyang Plain, thirty-five miles long and two to three wide, which leads up to the Tung-lung Pass. The plain is about sixteen thousand feet above the sea, one of the most elevated in the world, and there we find an encampment of the Tartar shepherds, with their black tents and vigilant sheep-dogs, and thousands of sheep and goats, with a few shaggy yaks browsing on the slopes of the heights, dappled low though these are by frequent patches of snow. Before the approach of winter this sole visitation of human life will be withdrawn, and the wild expanse will be left to its native owners—the wild horse, the gigantic wild sheep, the hare, and the marmot. The wild horses are wary as well as swift, and always balked the pursuit of our sportsmen; but the hares—whom the Ladak people call “hill asses,” (on account of their long ears,) and refuse to eat—large and fine-flavored as those of England, fell in numbers before the double-barrels. The climate of this elevated plain is very trying, and the rarefied atmosphere and diurnal vicissitudes

of temperature affected several members of the party with slight intermittent fever. “To a solar heat at noon-day, many degrees hotter than in any part of India, succeeds at night a cold so intense that even during the summer months it freezes almost every night.” More than once, when riding over this plain in pursuit of the wild horses, (which give to it their name, *Kyang*.) Colonel Torrens experienced the illusion of the mirage. “It is noon. The sun's rays beat down fiercer and fiercer; my eye-balls ache with the glare, and the whole expanse around me seems to dance and quiver in the fervid heat. Then on the horizon would appear a cool sheet of water.” But actual sheets of water there are, even at this great elevation. Over the range of hills which bound the plain on the north, there is a large salt-water lake about five miles long and half as broad, its shores glistening with a thick saline crust and its surface covered with a tempting abundance of wild fowl, which, however, to the disgust of our sportsmen, would not “come to be killed.”

We left Lord W. Hay's party descending the valley which leads into Cashmere from the north; and as Captain Knight entered Cashmere from the south, we shall accompany that officer up from the plains, and then combine his narrative with that of Colonel Torrens, in order to do justice to the beauty and fascination of the “Happy Valley.”

After a flying visit to Simla, where he finds that the orders of the “powers that be” render it necessary for him to enter the Himalayas not by that route, but by the Peer Punjal Pass from the Punjab, Captain Knight reluctantly jolts down again into the plains, and pursues his course across the interesting flats of the Punjab, with its many rivers flowing in one or more channels amid four or five miles of sand, making the captain lose patience with “rivers that have no opposite banks.” Journeying through Lahore to Goojerat, another stage brings him to Bimber, the first village within the territories of the Maharajah of Cashmere, where he finally escapes from the plains, and commences his ascent towards the lovely valley. The distance from Bimber to Sirinuggur, the capital of Cashmere, is one hundred and seventy miles, and nearly two thirds of the distance must be traveled before reaching the summit of the

Peer Punjal Pass. The route—as is the case with mountain traveling every where—follows the natural openings in the mountains formed by the beds of streams, through valleys and ravines; and as several parallel ridges have to be crossed, from one valley into another, the journey has many ups and downs, but ever rising towards the summit of the distant Pass.

In the first day's march from Bimber the travelers found themselves among the pine-trees, and the freshness of the mountain air took away the remembrance of the dusty plains. Next day the path led up a rocky valley, beside a dashing stream, then straight up a precipitous mountain wooded with pine, and down the other side. The third day they were again among rocks and pines, a mountain-stream accompanying them all the way; yet they passed also through a little region of fruit-trees, "through clustering pomegranates, figs, plums, peach-trees, wild, but bearing fruit," interspread with pines; "and sometimes we came upon a group of scented palms, which looked strangely enough in such unusual company." On the fourth day the path led through a gradually ascending valley, cultivated for the rice crop in terraces, and irrigated by a network of canals fed by the mountain streams. Another march brought them to Thannah; and the next day they reached the foot of the *real* mountains, where they abandoned their ponies and proceeded on foot. Mountain upon mountain now rose before them, richly clothed with forest trees; while, overtopping all, peeped up the glistening summits of the snowy range, making every thing around seem cool and pleasant, despite the hot sun's rays which poured upon the party. As the road wound among rocks and dells the air was perfumed at every step by the wild rose and the heliotrope. And lo!—

"At a bend in the road, what should appear almost over our heads but a troop of about a hundred monkeys, crashing through the firs and chestnuts, and bounding in eager haste from tree to tree in their desire to escape from a party of natives coming from the opposite direction. They were large brown monkeys of the kind called *lungoors*, standing some of them three feet high, and having tails considerably longer than themselves. Their faces were jet black, fringed with light gray whiskers, which gave them a most comical appearance; and as they jumped along from tree to tree, sometimes thirty and forty feet through the air, with their small families following as

best they could, they made the whole forest resound with the crashing of the branches, and amazed us not a little by their aerial line of march."

Next day "our path led us up the main torrent towards the snow; and in the first three miles we crossed about twenty pine bridges thrown across the stream, some of them consisting of a single tree, and all in the rudest style of architecture. After an almost perpendicular ascent, up natural flights of steps, we reached our next stage, Poshana, a little mud-built, flat-roofed settlement on the mountain-side."

Here Captain Knight and his friend engaged a couple of "*shikárees*," or native sportsmen, and putting on grass shoes or sandals, (which they soon found absolutely necessary for walking on the icy slopes,) made a week's excursion on the snowy mountains overlooking the Peer Punjal Pass, in a not very successful search for game. Returning to their "camp" at Poshana, they crossed the pass; but to their disappointment, instead of seeing something of the far-famed valley, "nothing met the eye but a wild waste of land, bounded on all sides by snow." In the latter part of the next day's march, however, the path entered a beautifully wooded valley, and thereafter passed through a thickly shaded wood, studded with roses and jessamine, and peopled with wood-pigeons and nightingales, which gave the travelers a morning concert; and at length they halted at Heerpore amidst a fine grass country. On the following day they found themselves gradually passing into the Valley, and changing rocks and firs for groves of walnut, and moss and fern for the more civilized strawberry and wild carnation. At the village of Shupayon, their halting-place, they found the flat mud roof of India giving place to the sharply pitched wooden one, thatched with straw or tiled with wood, which marks the domestic architecture of Cashmere. At this point a lovely view opened out before the travelers: the far-famed valley lay at their feet, surrounded on all sides by snow-capped mountains. Next morning they started on their concluding march into the capital of Cashmere. The first appearance of the lower part of the valley was rather disappointing; still the country was extremely fertile, and its tameness was redeemed by the glorious mountain ranges, which bound the valley in every direction with a pure, unsullied fringe of snow. "Our path was occasion-

ally studded with the most superb sycamores and lime-trees; and as we approached the town we entered a long avenue of poplars, planted as closely together as possible, and completely hiding all the buildings until close upon them."

And so they reached Sirinuggur, the capital of the Happy Valley. Here they halted for some days to indulge in the *dolce far niente*, which seems to be the only kind of life suitable to the lovely valley, which is a veritable land of lotos-eating. What is now the Valley of Cashmere was once the bottom of a great lake, the waters of which at length forced a passage for themselves through the Baramoula Pass, through which the river Jhelum now descends into the plains of the Panjab. Three lesser valleys—that of the Sindh river, leading north-eastwards to the Bultul Pass; that of the Jhelum, leading eastwards up to Islamabad; and that of the Lower Jhelum, leading south-westward to the Wuler Lake and the Baramoula Pass—gradually open out into the circular plain in which lies Sirinuggur and the Lake of Cashmere. Inclosed on all sides by the ranges of the Himalayas, richly clothed by forests on their lower slopes, and crested with the everlasting snows, the valley presents a wide expanse of undulating plain, bearing on its broad bosom cities, lakes, and gardens, and rich alike in forests, fruits, and flowers. The Jhelum flows through Sirinuggur, forming the Mall of the capital; and the seven bridges which span the river are picturesque structures, built entirely of wood, resting on piers formed of massive blocks of cedar—some of them having rows of shops on them, flanking the footway on either side, such as one sees in ancient prints of Old London Bridge. In the summer months there are always parties of British officers and civilians, sometimes with ladies, to be met with in Sirinuggur. Most of them are mighty hunters, spending the greater part of their time in the hills; others, more luxuriously, do nothing but sail about in the boats on the clear and almost currentless Jhelum. The boats are long, narrow, flat-bottomed, built like canoes, and at the extremities slightly curved up out of the water; the boatmen sit and paddle at either end, while the center of the skiff is reserved for the sahib. Here he reclines on cushions—or in fact on his own bedding transferred to

the boat—shaded from the sun by an awning of matting. Life in Sirinuggur is best seen on the river, and from the river, so let us hear Colonel Torrens describe the scene:

"The river, from the 'Visitors' Reach' to the last of the bridges—and there are seven—forms the Mall, or promenade—the Rottenrow of Sreenuggur. This is the invariable resort of the 'do-nothing' in the cool of the evening. Languidly smoking a cigar, he leans back on his cushions, and is paddled up and down, and down and up again, till it grows dark, when he is paddled off, and is seen no more till the next evening—for the existence of the 'do nothing' is not a sociable one. We noticed them passing and repassing each other without the most distant sign of recognition; they do not attempt to extend the circle of their acquaintance, *that* would be doing something—a something, too, that would involve a still further labor, such as a morning call, or possibly an invitation to dinner; and exertions arduous as these are quite incompatible with the *dolce far niente* of a 'do-nothing's' life.

"Near the arches of every bridge are groups of fishermen, standing erect in the bow of their boats, 'throwing a fly' with most commendable perseverance. 'That sahib,' said one of my boatmen, 'has been here for four years, fishing the whole of the season, and every morning and every evening has whipped the water under that very identical arch. Oh! it's a great sahib for fish!' Possibly the man lied, and no doubt he exaggerated greatly; but during the ten days we spent at Sreenuggur, I never passed that bridge, morning or evening, without finding that devoted disciple of Izaak Walton at his post, rod in hand, whipping the stream as perseveringly as ever.

"The banks of the river present much the same appearance as they did in the morning, save that the bathing machines are fuller—for such we discovered some strange wooden erections to be, which, moored at intervals to the shore on either side the river, seem to float on the water. These were now in constant requisition, and we should have come away deeply impressed with the personal cleanliness of the inhabitants of Sreenuggur, had we not remarked that the dirty old loose wrapper—the usual dress of the Kashmiris of both sexes—was invariably donned again after the operation; a relapse into which 'vile habit' must militate fatally against the healthful and cleansing results of a dip in the Jhelum.

"But now the sun has sunk below the houses of the city to our left, and its slanting rays can no longer annoy you, so the boatmen stow away the awning, and permit your gaze to wander upwards from the bathing machines, boats, and landing-stairs to the trellised windows of the picturesque houses above you; some of which, perched on slender piles, lean

over the water, and seem to have serious intentions of taking an evening stroll on stilts. Seen dimly through the delicately-carved woodwork of the half-open lattice, you will now and then, if you are lucky, catch a glimpse of the graceful form and face of some fair Kashmirian girl, with braided tresses, and dark bright eyes slyly peeping out on the crowded river below. And now, his day's work done, the pleasure-loving Kashmiri begins to enjoy himself; sounds of mirth and laughter, of music and merriment, are borne out to you from those mysterious casements, for there abide the queens of dance and song:

‘Those songs that ne’er so sweetly sound,
As from a young Kashmirian’s mouth,’

and boats freighted with bundles of dim drapery, whence peep little jeweled hands and slippered feet, glide past you—

‘Youth at the helm and Pleasure at the prow.’

The Rotten-row of Sreenuggur has, I regret to say, its ‘pretty horsebreakers’ too!”

Solomon’s Throne and the Hurree-purwat Fort, the latter of which immediately overhangs the capital, are the two eminences which rise aloft above the watery valley. But where is the Lake? Leaving the crowded stream of the Jhelum, and paddling up a canal between green-sward and overhanging foliage, you come to a pair of massive wooden folding gates, through which your boat glides: these, actually, form the entrance to the Dal, or Lake. But if you look for

‘the mountain’s portal that opens
Sublime, from that valley of bills to the world’—

as Tom Moore has it—you will find that you are passing between Solomon’s Throne and the Hurree-purwat, albeit these twin heights are nearly three miles miles distant from one another. After passing the gates on the canal, you have still a long pull through a narrow channel ere the broad expanse of the lake opens out in front of you. The lake’s surface is so thickly covered with the broad shining leaves and rosy flowers of the lotus, and with the tangled green of the water-nut, and its sides are so concealed by floating gardens, bearing cucumbers and melons, that it is difficult at first to form an idea of its size. But the first glimpse is sufficient to convince you of its beauty. A grand Mela, or fair, on the water, to which the Maharajah and all his court went in state, took place during Captain

Knight’s stay in Sirinuggur, and is thus described by him:

“The lake is beautifully situated at the foot of the mountains, and was covered so densely in many parts with weeds and water plants that it bore quite the appearance of a floating garden. And as the innumerable boats paddled about, with their bright and sunny cargoes, talking and laughing and enjoying themselves to their heart’s content, the scene began to identify itself in some measure with Moore’s description of the ‘sunny lake of cool Cashmere,’ although the poet’s eyes had never rested on either lake or isle. . . . In the evening, the number of boats congregated on the lake was marvelous. All were perfectly crammed with Cashmerian pleasure-seekers; but the turbaned faithful, in spite of the pressure, in no way lost their dignity, but with pipes and coffee enjoyed themselves in apparently entire unconsciousness of there being a soul on the lake beside themselves. The most wonderful sight however, was the immense crowd of many-colored turbans congregated on shore, witnessing the departure of the Cashmerian Guards; and as they thronged the green slopes in thousands, they gave one quite the idea of a mass of very violent-colored flowers blooming together in a garden.”

The once famous Shalimar gardens on the lake—where Jehangver used to spend so much of his time with the far-famed Noor Jehan, and which was the scene of their reconciliation, as related by Feramorz to Lallah Rookh—is the favorite place with British visitors for getting up a champagne dinner and a nautch. Lord W. Hay’s party were thus entertained by the Maharajah, and we regret that Colonel Torren’s account of the banquet is too long for quotation. We must content ourselves with giving Captain Knight’s slight sketch of the place:

“The vista on entering the Gardens [from the lake] was extremely pretty. Four waterfalls appear at the same moment, sending a clear sheet of crystal water over a broad stone slab, and gradually receding from sight in the wooded distance. A broad canal runs right through the gardens, bridged at intervals by summer-houses, and crossed by carved and quaintly-fashioned stepping-stones. At the extremity there is a magnificent baradurree of black marble, which looks as if it had been many centuries in existence, and had originally figured in some very different situation. The pillars were entire to a length of seven feet, and were highly polished, from the people leaning against them. Around this, in reservoirs of water, were about two hundred

fountains, all spouting away together—and on one side a sheet of the most perfectly still water I ever saw. It appeared exactly like a large looking-glass, and it was impossible to discern where the artificial bank which inclosed it either began or terminated."

So far as we may trust the opinions of travelers, the dancing-girls of the Nile beat those of India; but of all parts of India, Cashmere is the one where the nautch is to be seen to most advantage. Nevertheless, both Colonel Torrens and Captain Knight were inclined to yawn over the performance. The movements of the dance have little beauty in the eyes of Europeans, and the dress effectually hides any beauty of form in the dancers. Both the colonel and the captain give us a portrait of "Ghulabie," a prima donna of the Nautch; but whether it is the same fair one who sat to both officers we can not tell, as the sketch taken by the colonel is in profile, and that by the captain is in full face. Captain Knight, in this part of his diary, also gives some good sketches, in chromo-lithograph, of the ruins of Cashmerian temples, which were overthrown many centuries ago by the bigoted Mohammedan invaders. Cashmerian architecture in those ancient temples is more elegant and symmetrical than any to be met with in India. It is evidently a cross between the Indian and the Greek, and exhibits the influence exerted in Cashmere by the Hellenic colonies which Alexander the Great planted in Cabool. The many ruins of ancient cities in the valley show that Cashmere in former times was more populous and prosperous than it is now. These ruins, as well as the beautiful landscape and lovely aerial effects of the valley, furnish most charming subjects for the pencil of the artist; and we are happy to say that the English public will soon have an opportunity of seeing for themselves some of those views as delineated by a much-traveled and most accomplished artist. In the magnificent work about to be published by Messrs. Day and Son, in which the water-color drawings taken on the spot by Mr. Simpson are to be reproduced in chromo-lithographs, forty or fifty of the plates are devoted to the scenery of the Himalayas and Cashmere; and having seen some of those drawings, we can affirm that they leave nothing to be desired, either as regards artistic effect or precision of drawing. The title of this forthcoming work

is *India, Ancient and Modern*. It will comprise two hundred and fifty plates, with essays and descriptive text. The letter-press is to be written by Mr. Kaye, whose name is a guarantee for the excellence of the literary portion of the work. In illustration of what we have said of the influence of Greek art visible in the ancient edifices of Cashmere, we may state that in one of the drawings which Mr. Simpson gives of the ruins at Martund, the finest in Cashmere, there is a part of the buildings which, if isolated from the rest, would lead even a connoisseur in architectural art, at first view, to assign it to Greece, and not to India. As verbal description is totally inadequate to describe many of the lovelier effects of landscape, we are happy to leave to Mr. Simpson's pencil the delineation of the varied beauties of Cashmere, which no skill on our part could suffice to set before the reader. One of his water-color drawings of the Lake of Cashmere reminds us at once of Moore's lines:

"Oh! to see it at sunset, when warm o'er the
Lake
Its splendor at parting a Summer-eve
throws—
Like a bride full of blushes when ling'ring to
take
A last look of her mirror at night ere she
goes."

And the artist's picture of the rosy lotus-flowers on the lake really justifies to the full the vision which rose before the mind's eye of the poet when he wrote—

"And what a wilderness of flowers!
It seemed as though from all the bowers
And fairest fields of all the year,
The mingled spoil were scattered here.
The lake, too, like a garden breathes
With the rich buds that o'er it lie,
As if a shower of fairy wreaths
Had fallen on it from the sky."

Captain Knight did not content himself with spending his holidays in the Happy Valley, and made an excursion into Ladak as far as his term of leave would permit him to go. Ascending the valley of the Sindh river, he crossed the mountains which bound Cashmere on the north, descended for some distance the Dras river, and then struck across into the valley of the Indus—visited Leh, and proceeding onwards through an almost pathless country, where Buddhist monasteries and

buildings are actually more plentiful than villages, he arrived at Hemis, the turning-point of his travels; from whence he made his way back by a new route over the mountains, which brought him down into the eastern corner of Cashmere at Islamabad. Although in this latter portion of his diary, he in part goes over the same ground as Colonel Torrens, it is, perhaps, the most interesting in his book; and we had marked several passages in it for reference, which we must leave unnoticed. How people can live through the winter in those bleak mountainous snowy regions passes our comprehension. Rain almost never falls, and the vegetation is wholly dependent upon an irrigation which leads the ice-cold waters of the mountain streams over the patches of soil to be found in the valleys. The miserable hamlets have seldom more than five acres of cultivated ground around them. Bunches of hay are hung upon the trees during autumn, in order to supply food for the sheep in winter, when the snows cover the ground many feet deep and raise the animals to within reach of their suspended fodder. What with the avalanches which frequently overlay the little villages, and the winter which prevails during the greater part of the year, the poor peasants must have a hard time of it. Even the monasteries—some of them large buildings—perched among the rocks, are many of them deserted, and falling into ruins; the late Maharajah Golab Singh—a rare combination of tyranny and rascality, as the condition of the country still testifies—having pounced upon their treasures as a means of recruiting his own finances.

Mr. Simpson crossed even loftier passes than Lord W. Hay's party. On his way from Chini to the Tung-lung Pass (where his route met that described by Colonel Torrens) he had to surmount the Manerung Law, eighteen thousand five hundred feet, and the Parung Law, nineteen thousand feet, the highest known pass in the whole Himalayas. This wild region presents great attractions to the sportsman; wild yaks, wild horses, the gigantic wild sheep of the mountains, and the ibex, abound, besides bears, marmots, etc. But he must be a veritable Nimrod who undertakes a sporting expedition in these altitudes. Besides the fatigues of the journey, and of "roughing it" in these far away solitudes, extremes of heat and cold

combine to try the constitution of the tourist. Speaking of the temperature on the Kyang plain, some fifteen thousand feet above the sea, Colonel Torrens says, "to a day spent as it were in the Desert of Sahara, succeeds a night of Arctic frigidity." In truth, the great heat of the sun at these altitudes is as yet unexplained by science. It reminds us of the parallel fact mentioned by Parry in one of his Arctic voyages, when his ship was inclosed in the ice: that the pitch was melting on the sunny side of the ship, while brandy was frozen on the other! It would seem as if the intense cold suffices to energize the action of the solar rays; *how* we can not as yet tell, although probably it is on the same principle that opposite polarity produces intensest electrical action. A gentleman who lately surmounted these lofty passes has expressed to us his belief that the so-called "snow-blindness," which so severely affects the traveler in these regions, is not a mere dazzling of the eye, but an actual scorching; the heat rays being reflected from the snow to an unusual extent, as well as the light. Possibly this (comparative) non-absorption of the heat rays by the snowy surface is a provision of nature, by which the temperature of the air in Alpine and Arctic regions is kept at a higher point than would otherwise be possible. Experiments could easily be made to solve this question. It is to be remembered also that it is only reasonable to believe that the solar heat is much greater on mountains than at an equal altitude in mid-air; and we believe (although science as yet takes no cognizance of the matter) that the density of the atmosphere is likewise greater on mountains—at least during night and in the shade—than at a similar height in space. Be this as it may, however, the rarefaction of atmosphere is so great on these mountain-passes as to produce in most persons severe headaches and sickness. "Our sick-list is steadily on the increase," writes Colonel Torrens as his party ascend to the Kyang plain, and (as we know partly from his book and partly from other information) before they got over the Tung-lung Pass fever and other forms of illness told heavily on the party. Any one affected, however slightly, with organic weakness, either of heart or lungs, ought to eschew all such ascents. This warning is not so superfluous as some

may think it. A few years ago a young officer, whose lungs were impaired, in crossing the summit of the Parung Law was rendered speechless, and died in a few days afterwards. And it would seem that the ascent of the Rotang Pass, (thirteen thousand feet,) by its effect on the

action of the heart, was the proximate cause of the death of Lord Elgin, whose loss is deplored by all classes of his countrymen, and who breathed his last at Dhurmsala amid the mountain solitudes of the Himalayas.

From the London Quarterly.

HISTORY OF THE SUPERNATURAL IN ALL AGES.*

[Concluded from page 147.]

NOTHING can be more damaging to the claims of spiritualism than the character of its revelations. Indeed, it is difficult to treat this subject with gravity. Here are tens of thousands of people professing to hold intercourse with the inhabitants of another world. They possess the faculty of summoning the spirits of departed men of ancient as well as of modern times, and the highest class mediums can converse with these spirits, and convey their utterances to the public. It is no more than reasonable to expect that with such a facility of intercourse as has thus been opened up, we should by this time have learned something respecting the other world; or at least, assuming that such communications may be forbidden—that the spirits may not be permitted, like the ghost in Hamlet, to unfold the secrets of their prison-house—we should have expected to receive some sentiments worthy of the reputation of the illustrious men who have been of late so frequently deprived of their celestial repose. The utter absence of dignity, of novelty, of consistency, in the ten thousand answers which have been rapped out from the spirits is, to say the least, not calculated to enhance the credit of the witnesses. The internal evidence is all against them. There is only one point in which the spirits generally agree, namely, that the other world closely resembles our own; yet even this statement is not supported by the character of the communications received, which exhibit an amount of imbecility, bad grammar, and inanity,

very different from the vigorous, common-sense talk of the average of people in their daily life. How is it that the three million mediums in the Northern States have not been able to get a scrap of information from the spirits respecting the plans of the Confederate commanders? How is it that not one of them discovered the whereabouts of General Lee, or of Stonewall Jackson, and prevented their pouncing on the Northerners unawares? How is it that not a single secret crime has been brought to light, or offender brought to justice? How is it that the spirits are so destitute of moral courage as invariably to coincide with the religious and political opinions of the parties who seek their intercourse; so that when a Universalist inquires as to the condition of the departed, he receives for answer that all are happy, and that "the burning gulf, with all its horrible imagery, exists only in the traditions of men, and in the fitful wanderings of a distracted brain;" while Calvinist mediums "receive much injury to their health from the infernal stench and effluvia," and are "sickened and disgusted by a detestable taste of mixed sulphur, soot, and salt, and felt continual burning as from poisoned arrows and the stings of scorpions?" How is it that the spirits, when attempting physical feats, can do nothing better than raise a table to an angle of forty-five degrees, or cause chairs to fall over, or lift up Mr. Home's coat-tails as he floats near the ceiling, or make the joints of arm chairs crack at their masters, or execute a half illegible

scrawl upon a piece of paper? Can any noble or elevated feature be pointed out which tends to relieve these ghostly confabulations of their inherent incredibility, or to show that the internal evidence is not hopelessly against them?

It is astonishing how little respect spiritualists have for spirits. Mr. Howitt believes that the improvisatori of Italy are all mediums; "they are but the flutes and trumpets through which spiritual poets pour the music and eloquence of other spheres for the occasion." If so, the only conclusion to which we can come is that the terrestrial poets are beyond comparison better than the spiritual, and that any decently educated musician can beat the flutists and trumpeters of the unseen spheres at extempore melody. Indeed, in whatever department their powers are tried, their inferiority to us corporeal beings becomes evident. As Mr. Howitt refers to this objection again and again, he can not be supposed to be indifferent to it; and in truth he ill conceals a little vexation at his friends the spirits for not behaving with more dignity. He assures us, however, that they could do a great deal better if they would, and that the reason why their communications are not more worthy of themselves is that the present age is not in a condition to profit by any thing higher. "Men sunk in their spiritual condition to the earth, must have manifestations of the earth first, to awake them. For this reason the much-despised and ridiculed physical manifestations have come first, as the *only ones*" [the italics are Mr. Howitt's] "adapted to the degraded physical status of men, many of them imagining themselves peculiarly enlightened and refined." This degraded type of mankind, we are elsewhere informed, is represented by such petrified men as Faraday and Brewster, who have no more faith than a stone, and whose scientific atheism clings to them like a death pall, and renders them "as utterly disqualified for psychological research as a blind man for physical research." The reason, then, why the revelations of spiritualism up to the present time have not taken a higher type than the climbing of tables on to ottomans is not because the spirits are incapable of any thing loftier, but because such babes as the Faradays and Murchisons of our age can at present only have milk administered to them. This explanation is offered in all serious-

ness and good faith on the part of our author. He does not appear to have reflected how different is such conduct from that of the divine founder of Christianity, with whom he is most anxious to ally the cause of spiritualism; who, appearing to a generation equally debased, we may presume, with our own, did not think fit to convince them by tricks and empty truisms, but uttered doctrines which as far outshone the wisdom of existing paganism as his miracles outshone the feats of ancient or modern necromancy.

And here it may be proper to allow the believer in these spiritual manifestations to interpose a question. "Do you mean," he will ask, "upon such theoretical grounds absolutely to deny the truth of what Mr. Home, for example, has asserted? deliberately to affirm the principle that a supposed *prima facie* incredibility is sufficient to neutralize the assertion not of one only, but of scores and hundreds of capable and credible witnesses? Is not this to set up theory in place of fact, to forsake the inductive method, and to follow darkness rather than light? And would not the adoption of such a principle lead to inextricable doubt and confusion? If the communication of departed spirits with this world can not be demonstrated to be impossible, which no one, not even Sir David Brewster himself, can maintain, although he has declared that he will "do any thing rather than give in to spirits," why should not this theory have the advantage which in these days of inquiry is freely accorded to every other, and be able to avail itself fairly of the evidence which thousands of people who would be credited on any ordinary matter are ready to tender in its behalf?"

An ingenious writer in a recent number of the *Cornhill Magazine* has taken a very bold position in relation to this subject. He declares that, notwithstanding all the evidence which has been offered of unseen hands and spirit-writing and tables rising and mediums floating in the air, he does not believe a single word of it; that if he saw such things himself, his hope would be that the sharpness of the first impression would gradually wear away, and that he would finally be able to conclude that in some way or other his senses had deceived him; and that such a position may be fairly held without in the slightest degree calling in question the general veracity and personal honor of

those who have attested these phenomena. But this is an extraordinary stretch of credulity. A man who has brought himself to believe in the possibility of optical illusion, and of subjective impressions being mistaken for actual physical realities, on so wide a scale and with so wonderful a continuity and consistency of deception as this notion necessarily implies, is prepared to believe any thing; and is not unlikely hereafter to be found in the most advanced school of spiritualism. Nothing is more familiar than this revulsion from the extreme of skepticism to the extreme of credulity, so that it would occasion little surprise if the next *brochure* of this clever writer should be in defense of the exact verisimilitude of the spirit photographs which, we are informed, are to be bought at Pitman's in Paternoster Row. We may reject the conclusions of the spiritualists, we may find their doctrine of spiritual agency to be "not proven" by the facts which they adduce, without stultifying ourselves by denying all the facts themselves. And, after a liberal allowance has been made for deception, and imposture, and all the charlatanism which is certain to ally itself with an inquiry of this nature, it can not be rationally doubted that in connection with some of the mediums there exists an unknown force by which solid bodies are affected in a way which ordinary science fails to explain; while, in connection with others, there appears to be a perception of objects and events out of the range of ordinary vision, and in some few instances a faculty of second sight. We may admit the facts without being able to account for them. We are not obliged to deny every thing which we can not explain. We may be utterly unconvinced that these rappings and furniture-hoistings are caused by the action of our departed fathers and sisters, without being driven into the unscientific and altogether untenable position of denying the alleged facts *in toto*.

It can not be reasonably doubted, for instance, that strange noises have accompanied Mr. Home from his childhood; that he is surrounded with singular influences which came to him unsought, and over which he declares he has not the slightest power, "either to bring them on, or to send them away, to increase or to lessen them;" that he is sometimes thrown into a trance state, for instance, as an effect of

the performance of sacred music, in which, like Oberlin, he conceives himself to be in companionship with his spirit friends in as perfect and palpable a manner as in his ordinary external state he is with his friends of this world; that, during his frequent attacks of illness, his head had been slowly lifted and his pillow turned, by some force; that when first he rose from the ground he was greatly alarmed, but that his fears ceased when the phenomenon came to be frequently repeated; that strange forces play about him at certain seasons, but not always; and that what are the peculiar laws under which these forces may have become developed in his person, or in what manner the effects are produced, he knows no more than others. There need be no question as to the facts in this particular instance. Mr. Home's explanation of them—that they are caused by spirits, with whom he is frequently able to hold intercourse, and from whom he receives communications—is quite a distinct thing, and is as fairly open to discussion as any hypothesis in physical science.

It may be worth while to remark in passing, that it is no novelty in the history of scientific inquiry, to find that when new and strange phenomena or effects have come under observation, spiritual beings have been supposed to be the authors of them. It was popularly believed, for instance, when the use of the magnetic needle was first known in Europe, that its constant tending to the pole was due to the action of spirits, for which reason mariners were very cautious in taking it on board ship. In a French treatise written about 1620, the author, after stating that the magnetic needle might be highly useful at sea, observes that no master-mariner dared to use it lest he fall under the suspicion of being a magician; nor would the sailors ever venture out to sea under the command of a man who took with him an instrument which carried so great an appearance of being constructed under the influence of some infernal spirit. A similar superstition has attended the early period of other discoveries and inventions. The spirits to whom was attributed the production of such novelties were generally believed to be evil spirits. Indeed, the spiritualism of the present day differs from that of former ages chiefly in this, that whereas it was formerly the devil and the evil

spirits to whom almost all mysterious and novel effects were ascribed, the tendency in our own day is to attribute them rather to good guardian angels, or to happy human spirits. This change in the form of the opinion is characteristic of the popular theology and general belief of our own day, in which, whether truly or falsely we do not now inquire, the devil occupies a place immeasurably less prominent than in that of former days—indeed, is all but excluded. Now this modification in the form of the opinion coinciding so exactly with the altered character of the popular religious belief, amounts in itself to a presumption that in both cases the opinion may be equally subjective and imaginary. We know, it is true, but little of the other world; but we can scarcely conceive that it has altered so completely within the last century or two as a comparison between the accounts of mediæval and of modern spiritualists would lead us to conclude. In the days of the Popish ascendancy, the Church encouraged a belief in the apparitions of devils, since it gave the priests great power and profit as exorcists. Hence the prevalence of *diablerie*, not merely previous to the Reformation, but for some ages afterwards; and the popular belief on this subject being not uncongenial to the Genevan theology, it remained after the priestly influence which fostered it had passed away. Accordingly, the mediums of those days were conscious of the presence of an infinity of devils; whereas the mediums of our own times, when *diablerie* is no longer in vogue, never happen to meet with a devil. Formerly the spiritually perceptive persons saw hideous demons drop from the trees, or leap fearfully from bough to bough, howling as they gyrated through the air: at present an ugly customer of this kind never by any chance intrudes himself; but delicate feminine hands appear, with long and exquisitely-shaped nails—or, if unseen, they gently press the medium's forehead, stroke back his hair, and rap with infinite alacrity in approbation of a pretty sentiment. It is a suggestive fact that spiritual mediums have found the unseen sphere to correspond with the prevalent conception of it in their own age or party; although, upon points on which popular opinion has not pronounced, they have contradicted each other flatly; as, for example, with regard to the origin of angels, concerning whom Swedenborg

(revered by Mr. Howitt as one of the greatest mediums that ever appeared) declares that he had been among them frequently, and had conversed with them with perfect familiarity, and found that they were all originally men, or beings incarnate, in some world or other; whereas Jacob Böhme, who was equally gifted, says that God created the holy angels at once, not out of matter, but out of himself. The unvarying agreement of the mediums with the general stream of prevalent opinion, and their mutual contradictions in matters with which popular opinion does not interfere, seem equally to point to the conclusion that the spiritual world to which they find themselves introduced is a creation of their own brain, and that we must look to some other cause than the supposed agency of spirits for the explanation of the singular physical phenomena which attend them.

This does not amount to saying that it is impossible for departed spirits to hold communication with our earth. On this subject more will be said presently. All that is here contended for is that there is no sufficient ground for ascribing the phenomena of mediumship to their agency.

To what agency then are they to be ascribed? It is not inconceivable that the physical effects, such as the moving of solid bodies, and percussion of such bodies producing sound, may be due to vital magnetism, operating in a way which has not hitherto been distinctly traced. *A priori*, it is no more incredible that a magnetic force proceeding from a living organism should lift a table, than that a magnet should lift a bar of iron. And that the influence, whatever it may be, is usually found in close proximity to the person of the medium, is a consideration which tells in favor of this conjecture. If, for example, it is in reality spirits who lift the table at Mr. Home's *séances*, how is it that the spirits never operate except within a yard or two of his body? Why do they not operate in a distant part of the house, or, which would be more satisfactory still, in some place at a considerable distance to which the medium might then and there send them? There could not possibly be any difficulty in this if the spiritual doctrine were the true one; whereas the effects are always produced near to the medium's body. So with regard to the playing without hands of guitars and accordions; it is observable that they

do not usually play any known compositions, but unknown strains are produced which the spirits inform the medium are "the Song of the Sea," or "the Song of the Battle," or the like, and (which is the point to be observed) the instruments are always within a short distance; so much so, that on one occasion when a guitar moved and emitted sounds at a distance of eleven feet from Mr. Home, it was regarded as a very extraordinary case. But why, on the supposition that it was spirits who touched the guitar, should a distance of eleven feet, or eleven furlongs, add to the marvel of the phenomenon? Whereas, on the supposition that there is a magnetic or other influence which emanates from the body of the operator, it is to be expected that distance might, as in the case of radiating heat, diminish its force.

There is one class of cases which may seem to invalidate this argument, but it is only in appearance. They are thus described by Mr. Howitt:

"Nothing is more common nowadays than for this influence to attach itself to those who visit mediums or join in *séances*. A gentleman assured me that, after having been present at some extraordinary manifestations at Knebworth, the knocking followed him home, and continued on his walls, doors, and bed for a long time. The same influence has been left in our house for weeks after a remarkable medium has spent some days with us. Parties who have attempted to ridicule *séances* in disbelief, have suddenly found themselves, like the conjuror's apprentice, to have evoked a power which they could not readily lay again. I could name some very well-known instances."—Vol. i., p. 330.

Much of this may be accounted for by the impression which has been made on the senses continuing after the cause of it had passed away. Thus, after being tossed for many hours at sea, when we come on shore and retire to bed, the sensation still remains of heaving and pitching as when on board; or after looking too long at the sun, we see for some minutes an imaginary sun whichever way we turn our eyes; or after a singularly vivid dream, the impression on the senses can not be got rid of till we have been a considerable time awake. And even if it should appear that these lingering noises have been heard by persons who did not hear the sounds as originally produced, it is not inconceivable that some measure of the magnetic force—we here use the word

magnetic much in the same way as we use the x in algebra, to denote an unknown quantity—may have been transferred from the medium to persons of susceptible frame who have been in his company, just as passing a magnet backwards and forwards upon a bar of common iron imparts to it a certain amount of attracting force.

It is an indication pointing the same way, that this kind of mediumship is found in connection with a disordered or a feeble condition of the physical health. In certain rare instances persons are found in an abnormal physical or zoo-physical condition; the unknown force may possibly be magnetic, which emanates from them, and by which solid bodies in proximity to them can be moved, or apparently struck so as to produce a sound. In all this there is nothing supernatural; all that can be said is that the phenomena have hitherto been of too rare occurrence to admit of their being fully investigated; and that from their peculiar nature they have hitherto been encompassed with too much imposture on the one hand, and too much excited imagination and readiness to be duped on the other, to admit of the careful scientific investigation which they would otherwise have received.

We have already alluded to another class of phenomena, which are less directly connected with the physical, and which were known and observed long before the modern spiritualists attempted to appropriate them as their exclusive property. Can the belief be decisively rejected that patients in certain conditions are able to see otherwise than with their eyes, to see and describe objects at a great distance, to see at the pit of the stomach, to exercise a peculiar and most singular faculty of looking into the interior of the human body, whether their own or that of others, and in some few cases to anticipate coming events with a certainty of prescience beyond what is ordinary? We venture no dogmatic assertion in regard to this most difficult and interesting subject; but it is altogether impossible, in the compass of a paragraph or two, to enable the reader, to whom this may be a new path of inquiry, to form a just conception of the variety and abundance of evidence which exists in attestation of the marvels of zoo-magnetism; marvels, that is to say, in precisely the same sense as the electric telegraph is a marvel; a thing which on its first appearance so contradicted all our

conceptions of probability as to be viewed not only with incredulity, but with a feeling approaching to awe, yet which is now employed with as little emotion as we employ a cab horse. Among the many inquirers into these singular appearances few have been more patient, and none more capable, than Coleridge. As he was no professed magnetist, and never wrote directly on the subject, but only alluded to it here and there in his writings, it is not surprising that his remarks should not have been quoted by Mr. Howitt, although he has industriously ransacked almost every corner of ancient and modern literature in search of the supernatural. It may be worth while to quote a sentence or two from Coleridge:

"Nine years has the subject of zoo-magnetism been before me. I have traced it historically—collected a mass of documents in French, German, Italian, and the Latinists of the sixteenth century—have never neglected an opportunity of questioning eye-witnesses, (*e. g.*, Tieck, Treviranus, De Prati, Meyer, and others of literary or medical celebrity,) and I remain where I was, and where the first perusal of King's work had left me, without having advanced an inch backward or forward. Treviranus the famous botanist's reply to me, when he was in London, is worth recording. 'I have seen what I am certain I would not have believed on your telling; and in all reason therefore I can neither expect nor wish that you should believe on mine.'"

So much for the strangeness and difficulty of the subject itself. As to the quality of the evidence, Coleridge characterizes it as "too strong and consentaneous for a candid mind to be satisfied of its falsehood, or its solvability on the supposition of imposture, or casual coincidence—too fugacious and inflexible to support any theory" which should suppose these peculiar susceptibilities to be inherent in us all. As to the power to which we have referred, he further remarks—and this was written before the word "medium" was ever heard of in the sense in which spiritualists now employ it—that

"this sense, or appearance of a sense, of the distant both in time and space, is common to almost all the magnetic patients in Denmark, Germany, France, and North Italy. Many have been recorded at the same time in different countries by men who had never heard of each other's names, and where the simultaneity of publication proves the independence of the testimony; and among the magnetizers and attesters are to

be found the names of men whose competence in respect of integrity and incapability of intentional falsehood is equal to Wesley's, and their competence in respect of physis and psychological insight and attainments incomparably greater."

It does not form part of the design of this paper to enter further into the question of the magnetic sight. Enough has perhaps been said to accomplish the two objects at which we aim. These are, first, to rescue the phenomena themselves from utter disbelief. After allowing fully for trickery and mercenary imposture, there remains a residuum of fact, which, so far from being regarded with contempt, may possibly hereafter furnish a basis for the most profoundly and scientifically interesting of all inquiries, touching as it must upon the questions of the nature of vision, the relation of magnetism to light, and perhaps the nature of life itself. The speculation of Humboldt upon these phenomena is worth bearing in mind, that they are disjointed indications and fragments of some higher law which at present eludes us, but which when discovered will probably unravel some of the hidden mysteries of our being. And, secondly, to point out that because these phenomena have displayed themselves in the case of so-called spiritual mediums, we are not therefore to accept the solution offered by the mediums, that their powers and performances are the direct consequence of the intervention of spirits. The magnetic state, whether in the form of clairvoyance, of ecstasy, or any other, may be, though uncommon, as truly natural as the ordinary state. Neither Mr. Home nor any other medium can claim it as an evidence of the intervention of unseen beings, nor can Mr. Howitt claim it to swell the bulk of his supernatural catalogue, unless by the term "supernatural" is merely intended the unknown. At one point, indeed, this magnetic state may for a moment appear to infringe on what believers in the Bible hold to be supernatural. It has been sought to bring it into relation with the ecstasy or exaltation of the inspired prophets; and to find in it a psychological basis for the gift or faculty of prophecy. But this is an inquiry which would demand a separate essay.

It is thus that the facts of spiritualism, so far as they are really facts, may probably be reduced within the limits of the operation of those laws by which our

world is governed, and deprived of that superhuman character which is claimed for them. But spiritualism, in its modern form of mediumship, constitutes only one out of several classes of real or professed facts which, it is held, can only be viewed as supernatural. Magic, for example, and witchcraft, apparitions and mysterious cures—each of these subjects possesses a library of literature peculiar to itself; and if, during the ascendancy of Protestantism, and the still more potent ascendancy of physical science and of enlarging commerce, these subjects have passed into a temporary oblivion, it is by no means certain that the consideration of them will not be revived. Indeed, signs are not wanting of a reaction from the exclusively material type and tendency of modern thought. There are men who begin to feel wearied and ashamed of having so long “grubbed this earthly hole” in the search for old bones or for new metals; to revolt from what appears to them the utterly terrene and unspiritual aspect of modern physical science; and to long for other companionship than that of Lord Bacon with his eyes bent downward, like Adam and Eve expelled from Paradise, toward this hard, uninviting earth, to dig and till which was their curse and doom. The oscillations of human thought in the course of successive ages constitute a humiliating proof of our weakness and of the limitation of our faculties; and it is not impossible that the pendulum may have already reached the extreme limit of its arc in the direction of the physical and the material, and be about to swing back to the opposite extreme, when physical studies shall be as generally disregarded as metaphysical and spiritual studies have recently been. The tendency of modern science and speculation has been to place the universe under the dominion of absolute impersonal law, rather than under the dominion of a personal Father and Ruler; to deify abstract order and force, rather than to acknowledge the perpetual presence of him who is the ultimate origin of all force, and author of order; to inhabit the laboratory with Faraday rather than the spheres with Plato; and to refuse attention to whatever can not be calculated by geometry, or made in some way obvious to the sense.

There is a sense, then, in which we are proud to avow ourselves spiritualists. So far from shutting our eyes to the supernatural, we are as firmly convinced as Mr.

Howitt or the most devout believer in mediums can be, that there exist among us and around us spiritual agencies whose presence can not be ascertained by any material tests, and whose operation can not be determined by any physical laws. And further, it is to be feared that there is a great deficiency of living faith among Christian people in regard to these subjects. This can scarcely excite surprise when we consider how the whole tendency of modern scientific education has been to exalt mathematical demonstration, and to dwarf and cripple faith; to rest upon evidence which appeals only to the reasoning intellect, and to disregard equally the intuitions of the soul and the external revelation of the Scriptures. How, for example, is the Scripture doctrine concerning the devil and his angels quietly ignored, both in preaching and in writing! How coolly and quietly it is assumed that all that a man needs to guard against is himself and his own erring tendencies, in direct opposition to the plainest teaching not only of St. Paul but of the Lord himself! And yet what can be more rational than the scriptural belief? How utterly improbable it is, considering the varied links in the chain of physical existence, that man should be alone as an intelligent being! And if there are other kinds of intelligent beings, does not our own case too plainly establish the probability that there may be amongst them evil as well as good? And if they have access to our spirits, is there any thing absurd in the supposition that they may delight in tempting us to evil, seeing that every day shows us how men tempt each other? And in view of the order and subordination which are found to be necessary to the very existence of human society, is there the slightest improbability in supposing that these evil spirits may be of various ranks and grades, assigned to distinct occupations, and marshaled under the orders of the ablest amongst them? The same or similar remarks will apply to other departments of the Scripture teaching with respect to the invisible world, and our relations to it. Nor, in justice to physical science, would we attribute to it the whole of the unbelief, or want of belief, which prevails on these subjects. Other causes combine powerfully with it, and none more so than the absorbing character of modern commerce. One needs only to spend an hour or two in Cheapside, or at the Liver-

pool docks, to understand how the constant presence of the hurrying and whirling phantoms of the external world must unfit the soul for contemplation of the real and the invisible.

It is to these causes that the acknowledged apathy with respect to these subjects must be assigned, rather than to that which Mr. Howitt regards as the chief source of the evil. We are not aware whether, like another Friend or two whom we could name, our amiable author has crossed the gulf by which the drab society of George Fox is separated from the scarlet-robed church of the seven hills, and exchanged the star-twinkling of the inward light for the full-orbed moonshine of Church infallibility. Certainly the thoroughness and heartiness of his inveterate enmity to Protestantism, as displayed every where in the industriously compiled volumes before us, would favor the conjecture that he has done so. "The English Church and English Dissent," we are told, "now stand rent from the ancient Anglican and the primitive Church, in the faith in the supernatural; and it is not the spiritualists who are the heretics, but the clerical and the scientific classes of to-day." In another page we read that "the clerical and scientific mind of the present day is in a debauched, degraded, materialized, and crippled condition, derived from educational bias, and from a recent age of skeptical philosophy, in harmony with no age from the foundation of the world." Elsewhere we are told that "Protestantism alone has fallen from the faith" which all other branches of Christianity still retain. Canon Stanley in his volume on the Eastern Churches has spoken of "the frantic excitement of the old Oriental religions" still lingering in their modern representatives, as may be seen in what he calls "the mad gambols of the Syrian pilgrims;" and probably those of our readers who may remember the account published in the *Times* of the observances at Jerusalem at the last Greek Easter, will not deem his language too severe. But according to Mr. Howitt these extravagances only show that "there are more life and active faith in these religions than in modern Protestantism." *Active* faith it certainly is; for the agile and acrobatic feats of the devotees are really something wonderful. Indeed, it appears that Protestantism is the parent of a frightful abortion of humanity:

"It is true that in all lands and ages there has been a small section of the race defective in the spiritual vision and the spiritual ear, as there have been others defective in the corresponding outer organs. There have been the blind and the deaf, physically and spiritually. But blindness and deafness, whether physical or organic, have been the condition, not of the race, but of the deficient of the race; in the language of the common people, it has been 'not all right with them.' Whether these unfortunates have borne the name of Sadducees, Pyrrhonists, skeptics, atheists, or Rationalists, they have always been few till our time, when Protestantism, which Goethe has represented under the character of Mephistopheles, the principle of denial, has produced these deaf, dumb, and paralytic progeny in an alarming brood."—Vol. i., p. 368.

After this, let us drag our palsied and crippled forms toward the feet of our instructor, and, blind as we are, let us humbly listen to the explanations which he, gifted as he is with sight, may think fit to give us concerning some of those points wherein, as Protestants, we have been so egregiously ignorant, or deluded. First, then, it appears (i. 276) that before the fall Adam was a clairvoyant, and possessed a constant sympathy with the spirit-world, but that subsequently these faculties in man began to decline, (though a considerable measure of this "original knowledge and power of human nature of the primal period" lingered in old Egypt, and displayed itself in the priesthood;) and that when Adam "heard the voice of the Lord God walking in the garden," it was not, as is commonly supposed, in consequence of a special manifestation of the Divine Angel-presence, but simply that Adam had constantly the faculty of hearing the voice of God, as of any other spirit, after the manner of the most perfect mediums of the present day. So with regard to Moses, we are to understand not that he was a specially endowed and inspired prophet, but (i. 133,) "in modern phrase, a fully developed medium, and the spiritual voice of God was as audible to him as any human voice, or more so." It is a fair inference from this that the phrase "a fully developed medium" is deemed equivalent to "an inspired prophet;" and indeed any generic specialty of inspiration in the biblical prophet, as distinguished from the modern medium, seems impossible on the theory before us; a theory which, while professing loudly to be a resuscitation of the genuine faith that Protestantism has

all but destroyed, is in reality as certain an engine as could be devised to break down altogether the distinction between "the true sayings of God," as recorded in holy writ, and the dreams of any rhapsodist or delirious girl who may pretend to divine illumination. Indeed, we are plainly told that every great religious innovator is a spiritual medium, and that the difference between the prophets and founders of the several religions which have ruled the world is not so much a difference in kind as a difference in degree; the force and the comparative purity of the spirit-manifestation may vary in the several instances, but they all agree and all are to be revered in respect of one thing, namely, that they are the channels through which the light and power of the unseen world are conveyed to this. The citation of one brief passage will show that even the Redeemer himself, though his divinity is acknowledged, is not regarded as an exception from this general rule:

"To say that a man is a great religious innovator is simply to say that he is a great medium of spirit-power, the relative purity of which is immediately seen in the system produced. Whether it be Christ, the highest and purest of all promulgators of religion, God himself assuming this office, to place man in the possession of the eternal and undivided truth, or Zoroaster, Confucius, Buddha, Mohammed, or Joe Smith, each wrapping some portion of the primal truth in the clay and mud, the rags and finery of earthism and devilism, nothing but a spiritual energy, acting from the spiritual world, can give life and force to such apostleship."—Vol. i., p. 264.

It is a peculiar privilege of the modern spiritualist, that he can at once discern all these spirits, and pronounce both upon their force and also upon the comparative purity of any "religious innovator," or "medium," whether of ancient or modern times. As an example of the exercise of this new kind of infallibility, our author pronounces of Zoroaster, in a business-like tone which is really imitable, that he "was a medium of the first class as to power, and much superior as to quality to every thing then about him!" In the same way, of course, the relative quality of all these heaven-sent messengers of different grades, and of every age, may be satisfactorily settled! We have no wish to call in question the personal sincerity of Mr. Howitt, in his repeated and even vehement protestations

that his aim is to reinvigorate the faith of Christendom, and particularly of Protestantism. These asseverations are likely to influence a certain class of minds, timorous with regard to the safety of the ark of God in the rough roads whereon it is at present traveling, and too ready to accept the proffered aid even of an unknown hand to steady it. But a little reflection will show that all this spiritualism tends, not to the increase of faith, but to infidelity, in the peculiar form which infidelity in the present day assumes. That all religions are substantially alike, differing only in the degree of purity or otherwise in which the truth they contain is presented; that Zoroaster was inspired as truly, though not perhaps as clearly, as Isaiah; that the illumination of to-day is as trustworthy a guide as the revelation by Christ's apostles; that even in the basest of human superstitions there is a something of the Divine, which is to be revered—this is the "faith" which is preached as the peculiar gospel of the advanced nineteenth century, whose proudest boast is to have destroyed the ancient beacons of the Church, and to have vindicated the right of anybody and everybody to offer his services as pilot in the navigation of that channel which leads up to the port of eternal truth and repose. Extremes meet; and if this be the "universal faith" to which spiritualism tends, it is much the same thing as universal skepticism; for a man who believes in all religions is in a position not very different from that of him who believes in none. According to our conception of the matter, that sort of vision which views all religions in a dim and misty light, and, conceiving them all to be generically related, pronounces that they are all divine, although some of them may exhibit the Divine less conspicuously than others, is a condition analogous to that of him who saw "men as trees walking," and who required a further touch before he was able properly to distinguish the objects before him, and to see "every man clearly."

It is in this view of the subject chiefly that any serious importance is to be attached to it. So long as these exhibitions merely assume the character of oddities or of marvels, they may well be left to those who have the time and the curiosity to investigate them. So far as they develop new and singular phenomena,

whether physical or psychical, they constitute a fair case for scientific inquiry. Sir Henry Holland, twenty years ago, affected to account for the strange appearances connected with mesmerism, by saying, in rounded phrase, that it was nothing more than "a gigantic experiment upon the strength of the imagination;" forgetting apparently that this was in reality no solution of the difficulty, and that the faculty conveniently termed "imagination" remains as much an unsolved problem as before—indeed, is the very thing to be investigated, only under another name. The inquiries of medical men and psychologists into these difficult subjects may hereafter lead to more satisfactory explanations than any which our limited knowledge of psychological science has at present yielded. But when these rappings and these fancied communications with the spirits of the departed are seriously adduced as a kind of new revelation, calculated to revivify the torpid faith of the Church, when they are elevated to an equal importance with inspired prophecy and Scripture miracle, and when they are held up, apparently in all good faith, as an argument sufficiently potent to convince those whom reason and Scripture had failed to convince of the realities of an unseen state, it is time to disavow such companionship, and to state that this so-called auxiliary to faith is in reality an auxiliary to unbelief in one of its most dangerous and subtle forms.

There is one view of the case, indeed, in which it is far from impossible that the exhibitions in question may have some real connection with the spirit-world. It is not inconceivable that the prince of impostures, he who was a liar from the beginning, may have some unknown connection with them; nor, if the conjecture were hazarded that some of the more inexplicable phenomena may be due to the action of demons, could such a conjecture be at once dismissed as visionary. Certainly the reply that many of these supposed spirits testify to the truth, would not be conclusive as against such a conjecture. The young damsel at Philippi who followed Paul and his friends day after day through the streets, declared nothing but the truth when she pointed them out as servants of the most high God, who were showing the way of salvation; yet it appeared that it was an evil

spirit which prompted that utterance; and St. Paul, after bearing with her with much patience, felt that commendation from such a quarter, she being a known and professed medium, was not to be borne in silence, and a word from him spoken in the power of mighty faith was sufficient to expel the demon. So also in Judea in the times of our Lord, many persons of this class were ready to declare that he was the Christ; yet he refused to accept confession from this source, and compelled the spirits to silence.

In being cautious of receiving testimony from such a quarter—or, let us rather say, in resolutely refusing to accept it under any pretence whatever—the Church will be obeying the intimations of the Old Testament equally with those of the New. In the days of Judaism there were not only prophets and dreamers who employed enchantments and incantations avowedly in the name of the Evil One, or at least in avowed hostility to the God of Israel, there were also those who claimed to be witnesses for him, "prophets of the deceit of their own heart," as they are aptly called in Jeremiah, who were to be shunned, notwithstanding that they claimed to be defenders of the truth. (Jer. 23: 25–32.) Indeed, the occurrence of the mention of lying prophets is too frequent in the historical and prophetic books to need specific quotation. Equally familiar are the rigid prohibitions of witchcraft and sorcery. A witch was not to be suffered to live. A wizard was to be put to death. People professing to have "familiar spirits," by which is apparently intended a faculty similar to that claimed by our spiritualists, of conversing with the spirits of the departed, are classed with "wizards that peep and that mutter," in the same catalogue of abominations. As a matter of fact, this class of persons was usually found ranged on the side of polytheism; but whether or not, the very fact of their pretending to occult powers was a sufficient intimation to every Israelite that his duty was to avoid them. The agreement between the Old and New Testaments upon this point is so marked as to furnish a not obscure rule of duty. Persons who wish to regulate their conduct by the Scriptures will do well to inquire, before communicating with mediums, whether it is not a thing forbidden; and the pretension that these reve-

lations confirm "a universal faith," instead of throwing us off our guard, ought rather to increase our suspicion.

As to the existence of a universal faith in an unseen world—a belief found among men of every age, of every race, of every climate, and of every degree of ignorance or of civilization, that the whole of man perishes not at death, but that the spirit survives its separation from the body—we presume that this is no new discovery; nor were the marvels of spiritualism needed to prove a point upon which no one ever entertained the slightest doubt.

With regard to occasional and unexpected communications from the unseen state, such, for example, as the apparition to their friends of persons recently departed, the case is altogether different. It would be equally foolish to credit all the stories of this kind which an industrious collector may easily collect, or to deny the possibility of an apparition altogether. This latter kind of folly has been of late years a prevalent fashion. How can the fact be accounted for, it is demanded, that in proportion to the spread of knowledge and civilization the stories of apparitions become proportionately fewer? However their comparative rarity may be accounted for—though even at the present day they are not perhaps such rarities as unbelievers may suppose—it is certain that, with the exception of the sophists of the atheistical sects in Greece and Rome, and the Sadducees amongst the Jews, it is in modern times only that this species of skepticism has appeared. As Richard Watson has remarked, "the unbelief so common among free thinkers and half-thinkers on these subjects places them in opposition to the belief of the learned in every age and every nation. It does more: it places itself in opposition to the Scriptures, from which all the criticism, bold, subtle, profane, or absurd, which has been resorted to, can never expunge either apparitions, possessions, or witchcrafts." The *a priori* arguments as to the "absurdity" and "impossibility" of such things must certainly go for nothing with those who believe the statements of Scripture that such facts have occurred, and may therefore by possibility occur again.

There is scarcely a medical man of twenty years' practice any where in this country who has not met with instances

of peculiar appearances or sounds in connection with death. Such phenomena are by no means infrequent. Take the following case: A lady in London was awoken in the night by what seemed a sharp and violent knocking at the street door; she felt also a greater tremor than such a circumstance would have been likely to occasion; she sat up in bed for some time in this state, and, nothing further occurring, looked at her watch, and lay down to endeavor to sleep. The next day news arrived that her mother, fifty miles distant, died suddenly in bed at the precise moment at which this alarm had occurred. Or this: An aunt of the lady just mentioned had an old servant, who was lying ill at a cottage not far off. One day, in broad daylight, as she was sitting in her room, she heard three distinct taps at the door, and, finding no one there, said immediately to herself, "Ann is dead." She put on her bonnet at once, and on reaching the cottage found that the old servant had just expired. These cases, both of which occurred in the family of the writer of this paper, are of a kind that may easily be paralleled, in hundreds of instances in the domestic records of our country. A member of the University of Cambridge, now living, has collected more than two thousand of such cases. The following is more definite and more remarkable, and is given on the authority of a well-known author, Mrs. Crowe, who says that she received the narration from the lips of a member of the family concerned:

"Miss L. lived in the country with her three brothers, to whom she was much attached. These young men were in the habit of coming to her apartments most days before dinner, and conversing with her till they were summoned to the dining-room. One day, when two of them had joined her as usual, and they were chatting over the fire, the door opened and the third came in, crossed the room, entered an adjoining one, took off his boots, and then, instead of sitting down beside them as usual, passed again through the room, and went out, leaving the door open, and they saw him ascend the stairs towards his own chamber, whither they concluded he was gone to change his dress. These proceedings had been observed by the whole party: they saw him enter, saw him take off his boots, saw him ascend the stairs, continuing the conversation without the slightest suspicion of any thing extraordinary. Presently afterwards dinner was announced; and as the young man did not make his appearance, the

servant was desired to let him know they were waiting for him. The servant answered that he had not come in yet; but being told that he would find him in his bed-room, he went upstairs to call him. He was, however, not there, nor in the house; nor were his boots to be found where he had been seen to take them off. Whilst they were yet wondering what could have become of him, a neighbor arrived to break the news to the family, that their brother had been killed whilst hunting, and that the only wish he expressed was, that he could live to see his sister once more."

In this instance there was no voice. In the instances before mentioned there was a sound and nothing more. A singular story is that related in one of the old Methodist magazines, of two preachers riding together on horseback, as was the fashion in those days, on the way from the annual Conference to their circuits in Scotland. As they were moving quietly along, it appeared as if a two-leaved gate opened to let them through, and a voice pronounced the words distinctly, speaking to one of them, "You may go to your circuit; but you shall never return to England." And so it was, for he died shortly before the next Conference. The following case is said to have occurred in 1816 in Germany, and the publicity of the details before courts of justice and otherwise offered peculiar facilities for the detection of fraud or imposture, had they been practiced. We take the account from Mrs. Crowe's *Night-Side of Nature*:

"The late Mr. L. S. quitted this world with an excellent reputation, being at the time superintendent of an institution for the relief of the poor in B—. His old housekeeper was retained in his son's service. Not long after her master's death she was awakened in the night, she knew not how, and saw a tall haggard-looking man in her room, who was rendered visible to her by a light that seemed to issue from himself. This apparition appeared to her repeatedly, and she wished to resign her situation. Her master, however, promised to sleep in the adjoining apartment, in order that she might call him whenever this terror seized her, and advised her to inquire the motive of its visits. This she did; whereupon it beckoned her to follow, which after some struggles she summoned resolution to do. It then led the way down some steps to a passage, where it pointed out to her a concealed closet, which it signified to her, by signs, she should open. She represented that she had no key, whereupon it described to her, in sufficiently articulate words, where she would find one. She procured the key; and, on opening the closet, found a small parcel,

which the spirit desired her to remit to the governor of the institution for the poor at B—, with the injunction that the contents should be applied to the benefit of the inmates—this restitution being the only means whereby he could obtain rest and peace in the other world. Having mentioned these circumstances to her master, who bade her do what she had been desired, she took the parcel to the governor, and delivered it without communicating by what means it had come into her hands. Her name was entered in their books, and she was dismissed; but after she was gone, they discovered, to their surprise, that the packet contained an order for thirty thousand florins, of which the late Mr. S.— had defrauded the institution, and converted to his own use.

"Mr. S.—, junior, was now called upon to pay the money, which he refusing to do, the affair was at length referred to the authorities; and the housekeeper being arrested, he and she were confronted in the court, where she detailed the circumstances by which the parcel had come into her possession. Mr. S.— denied the possibility of the thing; declaring the whole must be, for some purpose or other, an invention of her own. Suddenly, whilst making this defense, he felt a blow on his shoulder, which caused him to start and look around, and, at the same time, the housekeeper exclaimed, 'See! there he stands now! There is the ghost!' None perceived the figure except the woman herself and Mr. S.—; but every body present, the minister included, heard the following words: 'My son, repair the injustice that I have committed, that I may be at peace!' The money was paid; and Mr. S.— was so much affected by this painful event, that he was seized with a severe illness, from which he with difficulty recovered. Dr. Kerner says that these circumstances occurred in the year 1816, and created a considerable sensation at the time."

In a case of this kind, it is perfectly fair to scrutinize the evidence as closely as possible, and each person must judge for himself how far it is sufficient. All that we wish to convey is, that whatever judgment may be arrived at as to the adequate attestation of this or that apparition-story, narratives such as those above related ought scarcely to be swept *en masse* into the same lumber-chamber with the alleged communications of mediums with the spirits of Socrates and Julius Cæsar, of Benjamin Franklin and Stonewall Jackson.* Where the alleged apparition oc-

* Concerning whom, by the way, the New-York mediums have just ascertained that, since his removal to the other world, he has turned abolitionist, and has joined John Brown's phalanx of philanthropists!

curs in connection with a death which could not possibly have been known at the time; where it is seen by a person not of debilitated nerves, but in sound health; where there appears to be some worthy object in view, and not merely the gratification of curiosity; and, above all, where the manifestation occurs, not at a *séance* in the dim moonlight, where sitters have their curiosity and expectation artfully strained to the utmost, and every nerve quivers with suppressed emotion, but unexpectedly, and under no coincidence of stimulating circumstances; such an account may be fairly admitted to examination, as not being *prima facie* incredible. In our profound ignorance of the nature of the relationships which may exist between the invisible world and this, to assume that communication under any circumstances whatever is impossible, is barefaced empiricism; not to urge how such an assumption is contradicted by a number of apparently well-defined facts. To those who are content to receive implicitly the statements of the Scripture writers, the accounts of the appearance of Samuel to Saul, and of the appearance of Moses and Elijah to the three disciples on the Mount of Transfiguration, are conclusive proofs of at least the possibility of an apparition.

A similar line of argument may be taken in regard to witchcraft. In witchcraft men seek avowedly to evil spirits for evil purposes. Allusion has already been made to the total antagonism between the belief of the Church generally with regard to this subject two or three centuries ago, and the prevalent disbelief of to-day. That ancient belief was doubtless absurdly credulous. It tended not only to magnify, but actually to create, the marvels which it received as indubitable. Fear, no less than faith, is a mighty force; and fear, in those days, gave to the witches and wizards a real power which they could not have possessed in a more enlightened state of public opinion. Who shall say what specters and phantoms might not be conjured up, what bodily ailments, the effect of imagination and nervous fear, might not be induced, in connection with those rites of studied horror and those diabolical incantations with which the practice of witchcraft was invariably connected?

There was another way in which fear contributed to the prevalence of witch-

craft. It led to the severest measures against the reputed witches and wizards. The most horrible acts of injustice and cruelty were perpetrated in the name of law. A poor unoffending old woman who had the misfortune to be suspected would be thrown into a pond: if she swam, it was concluded that she was a witch, and she was put to death; if she sank or was drowned, it was a proof of her innocence! Such persecution, carried on by wholesale, tended to make the magicians believe more firmly in witchcraft and in themselves. However conscious of being deceivers, they could scarcely persuade themselves that there was nothing in their art itself, when they saw such unequivocal proofs that every one believed in it. He who can not believe can not will, and the skepticism of the intellect disarms the magician. But when there is faith on both sides—when the magician thoroughly believes in his art, and the patient thoroughly believes in the magician—the power both of deceiving and of being deceived becomes such as will naturally produce effects which, in a different state of society, would be impossible: as we see in the case of modern spiritualism.

It is thus that a belief in the existence of witchcraft may be entertained without deciding the question whether or not the necromancers were actually in league with evil spirits. It is absurd to suppose that all the statutes of various lawgivers and princes, from Moses to the English House of Brunswick, were directed against a crime that never existed. But it is not necessary to believe that all the pretensions of the sorcerers were true. It is not necessary to believe that they could actually raise the devil and perform other like feats at their will. In the law of Moses it is just the profession or pretence of using such arts which constitutes the crime, without deciding the question whether there is a reality corresponding to profession. What was required to be proved was, not that the accused was actually in possession of demoniacal powers or arts, but that he *professed* to be so. If this could be proved, the offender was adjudged to death. And this was perfectly in keeping with the spirit of the theocracy; for it is clear that the profession of witchcraft could not be carried on without blasphemy.

It is remarked by Dr. Ennemoser, in his *History of Magic*, that the force of

will has no relation to the strength or weakness of the body: witness the extraordinary feats occasionally performed by persons under excitement. While we are writing, a medical friend relates to us the case of a patient of his, in an extremely weak condition of body, who suddenly sprang from his chair to a height of eight or nine feet, came down unhurt, and repeated the feat twice afterwards within a few minutes. And although the witches and wizards were frequently weak, decrepit people, they either believed in their own arts, or they had a friend and coadjutor in the devil, who was able and willing to aid them. They therefore did not doubt their own power; they had one great requisite—faith. "Faith," says Coleridge, "is as real as life; as actual as force; as effectual as volition; it is the physics of the moral being." *Croyez et vous le verrez* was the explanation given by the Marquis de Puységur of the cures he is said to have performed. "*Believe and will*," as Ennemoser observes, "unconsciously becomes the recipe of all such men as Greatrakes of Ireland, the shepherd of Dresden, and other wonder-workers. Hence we see why it is usually the humble, the simple, and the child-like, the solitary, the recluse, nay, the ignorant, who exhibit traces of these occult faculties; and hence we see also wherefore in certain parts of the world and in certain periods of its history these powers and practices have prevailed. They were believed in because they existed, and they existed because they were believed in. There was a continued interaction of cause and effect—faith and works."

Thus far, then, the practice of witchcraft, and many at least of the marvels connected with it, may be brought within the limit of the known and natural operation of cause and effect. How far such practices may in particular cases have been attended with supernatural powers is a difficult inquiry. Is it credible that men could so ally themselves with the devil, or with evil spirits, as thereby to acquire powers which under ordinary circumstances they could never have possessed?

It is obvious that evil spirits can not impart to men any power which they do not themselves possess. Whatever may be the limits of their own action upon physical nature, these limits can not be exceeded by men who may be in league

with them. And in proportion as we are convinced that evil spirits have usually no power to invert the established order of physical nature, we shall be disposed to deny any such power to the magician. Now it is well known to every theologian that this very question whether Satan has power to disturb the order of physical nature, has been keenly debated in the controversy respecting miracles. Not to mention works of minor reputation, the volume of Farmer on Miracles was written expressly to maintain the negative in this question. In doing this he finds his most troublesome difficulties to arise, as might be expected, from two distinct quarters—from the feats of the Egyptian magicians as recorded in Exodus, and from the cases of demoniacal possession in the times of our Lord. This absolute denial to Satan of all power to disturb the order of nature was no doubt a reaction from the excessive credulity of previous ages, which had attributed to the devil powers verging on omnipotence; and the negative doctrine laid down by Farmer a century ago has been pretty generally received to this day. But there seems no sufficient warrant for absolute and sweeping assertion in regard to this matter. It is quite conceivable that evil spirits may *usually* be restricted from interfering with physical nature, while yet on special occasions they may be permitted to do so. An illustration may be borrowed from the growth of corn. The time of growth and development of the corn plant is a time of non-interference. Soil and heat and moisture exert their accustomed influences, and every thing proceeds in undisturbed order. But the time of planting and the time of reaping are times of interference with the established order. The planting of the seed is a special interference, so to speak, with the previous state of vacuity, and it introduces an entirely new series of sequences, which proceed regularly till, at the reaping time, another special interference takes place. So, in the moral world, there may be long centuries of orderly sequence, in which nothing unusual occurs, and there may also be periods of special interference, of planting and reaping, when the usual order is disturbed. And it is worth remarking that such disturbances of nature's order have occurred chiefly at special crises in the history of man. The miracles during the long history of established Judaism

are exceeding few; but the life of Moses, its lawgiver, is a succession of miracles. The miracles during the growth of Christianity have been but few; but the lives of the Lord and of his apostles, who planted Christianity, are a blaze of miracles. Nor is there any thing in Scripture to prevent the supposition that at some future reaping-day the order of nature, which now proceeds with such unvarying regularity, may again be suspended or disturbed. And in connection with all this it may be observed that the chief examples of apparently supernatural power in connection with evil, or in opposition to God's messengers, have occurred precisely at the same periods wherein mighty works have been done in attestation of the truth. The greatest feats of the evil powers took place in the days of Moses and of Christ. It would seem as if, in those special times when the powers of the world to come have been brought to bear upon the order of nature, and have temporarily disturbed it, evil powers have been permitted, as well as good, to exceed the usual limits of their action; and that the devil, at such periods, knowing that his time was short, has come down among men with great fury—for instance, in the numerous cases of possession at the Christian era. And as good men, messengers of God, have been endowed at such times with supernatural powers in attestation of their doctrine and mission, it is not inconceivable that wicked men may have been permitted to ally themselves with the powers of evil, and that feats like those of the magicians of Egypt may have been accomplished through infernal help. Such a belief, while it appears consonant with Scripture, is not inconsistent with the belief that in general the marvels of witchcraft may be accounted for on natural principles.

The results of this inquiry may be summed up in two or three short paragraphs.

There is no reason to doubt the existence of unseen beings, whether human or other. That spiritual beings do exist—that they may hold intercourse with our world—that they may have access to our minds—that they may be able to influence the physical frame to some extent, not perhaps directly, but mediately *through the mind*, just as various material substances, opium or stramonium, for instance, are capable of affecting the mind

through the body—is a belief equally consonant with Scripture, with reason, and with the general teaching of the Church. Nor is it incredible that the separated spirit may hold communication in some instances at the time of death with persons yet living; or that evil spirits may so act upon the minds of men who yield up themselves deliberately to their influence, as to produce prodigies of different kinds which, in our profound ignorance upon these subjects, we find it difficult to account for.

But such a belief in the supernatural as is thus indicated does by no means involve, as a fair and necessary consequence, a belief in the doctrine of modern spiritualism. There is not the slightest inconsistency in receiving the former, and in rejecting the latter. The doctrine that certain persons are naturally gifted with the faculty, denied to the generality of mankind, of holding direct communication with departed spirits—that the spirits come at their call, hover about them, and manifest their presence, among other ways, by sundry feats and tricks of a physical nature—does not necessarily follow from admitting the reality of the alleged manifestations in some cases. There are other methods of accounting for these manifestations which, either separately or combined, appear to be not inadequate. At all events they will prevent the necessity of embracing the spirit-doctrine until a great many questions have been disposed of. We can only mention three, two of which have already been adverted to. There is, first, that mysterious force which we will here designate vital magnetism; in connection with which, as has been hinted, wonders not inferior to the selectest marvels of Mr. Home have been familiar to the initiated both in England and on the Continent for three or four centuries past. Then there is the influence of imagination, in itself a life-study. And this suggests a third point, which would require an article to itself—the existence of mental epidemics. Although mental pathology is not as yet sufficiently advanced to admit of these being reduced under a regular classification, still less of their being traced to their causes, the fact can not be questioned that epidemic mental affections have appeared and disappeared, in a way singularly analogous to epidemic bodily diseases. A further inquiry into this obscure yet interesting

subject might not be without result, in furnishing whole classes of facts with which the facts of modern spiritualism might advantageously be compared. Such a comparison would probably show that, viewing the rapid spread of this strange and singular belief in its aspect as a mental phenomenon, it is not altogether ex-

ceptional and unparalleled. Mental affections equally romantic, accompanied by outward phenomena equally puzzling, have appeared at different times in various parts of Europe, and, after prevailing a longer or a shorter time, have vanished, leaving behind them no permanent trace of their existence, except in books.

From the Popular Science Review.

BODILY WORK AND WASTE.

THERE is no truth which modern science has established with greater certainty than that every manifestation of physical force involves the metamorphosis of a certain quantity of matter; or, to put it in a still simpler form, that every exercise of power is made at the cost of a certain consumption of material. Whether it be the steam which propels our locomotives, or the elastic gases which project our cannon balls, the subtle fluid by means of whose vibrations we convey our thoughts with the rapidity of lightning from one end of the earth to the other, or the still more useful contrivances by which we turn night into day, and maintain the genial warmth of summer amidst the snows of winter—all these exhibitions of force, mechanical, electrical, or thermal, alike involve the disintegration, or, in other words, the *waste*, of some form of matter for their production. Without the combustion of coal or wood there would be no steam for the locomotive, no heat for the fireplace; without a similar, but more rapid combustion of gunpowder, or other explosive substance, there would be no development of elastic gases in the cannon to propel its ponderous missile; and combustion in these, as in all cases, is essentially a process of waste in which the active part is played by that most energetic of all wasters, the oxygen of the atmosphere. The fluid which circulates in the telegraphic wire is developed at the expense of the acid and the metals of which the batteries at its extremities are composed; and the light which illumines our streets and public buildings is generated by the

waste, (using the term in its chemical, not, of course, in its economical sense,) in gas works, of coal which was produced ages upon ages ago by the submergence and partial decomposition of ancient forests.

Now all these various ways of obtaining power may at first sight appear so very simple in their nature that it may seem trivial to allude to them. Irrespective, however, of the consideration that the simplest phenomena are often those which exhibit in their most intelligible form the grandest and most important laws of nature; and obvious as the fact may seem that the man who attempted to work a steam engine without supplying coal for its fire would stand but little chance of seeing its wheels revolve, it is doing no injustice to the majority of our readers to suppose that they have never asked themselves what fuel really does in such a case as this, and why it is so essential to the production of steam? It is probable that the idea may never have suggested itself to them that these and dozens of other instances of a similar kind which might be quoted, all go to show that without the disintegration, or waste, of some form of matter, whether it be coal, or metal, or tallow, or gunpowder, there is no production of any form of force, no real acquisition of power of any kind. And, like Columbus's egg, simple as this truth may seem when once clearly demonstrated, and often as men have lighted fires to warm themselves by, and long as they have employed the explosive properties of gunpowder to carry conviction to the minds of their *intelligent* fellow-creat-

ures, it is only quite in recent years that its reality has come to be distinctly recognized, and that we have begun to learn that perpetual motion, and other patent processes for extracting something out of nothing, are ideas worthy only of the sages of Laputa.

It may, however, be said, that all exhibitions of force do not involve a waste of matter. We may be told, for instance, that the stream of falling water which turns the river-side mill exerts its power on the mill-wheel in virtue of the force of gravitation which draws the water downwards, and that gravity is a force which, so far as we can see, does not involve the waste of matter as a condition of its manifestation. But this is an exception which is probably more apparent than real, and which is due rather to our ignorance of the nature of gravitation than to any deviation from a law which so unquestionably obtains in the vast majority of phenomena with which we are acquainted. For it is by no means unlikely that gravity, which is itself a cosmical force, acting through space upon the most distant elements of the universe, may be the local manifestation in our world of disturbances in the relations of matter going on in spheres existing at infinite distances from it.

The propulsive force, too, of the breeze by which the ship is driven through the resisting waves, at first sight appears to be a case of force exerted independently of matter or its relations. But here again the exception is only apparent and not real. For science tells us that that breeze is the offspring of heat acting upon the atmosphere, in which it produces currents; and that the heat comes from the sun, whose material relations exhibit, even to our superficial observation, a state of disturbance which is eminently suggestive of a more profound and incessant disorganization going on beyond our ken.

We may, therefore, take it as unquestionable, that so far as the inorganic forces of nature are concerned, their manifestation in all cases involves the cotemporary occurrence of waste, decomposition, or decay. But what are we to say of the forces which are given off by organized bodies? This thinking, talking, acting machine which we call man, whose brain is continually giving off *nerve-force*, which is as constantly stimulating some one or other of his muscles to give off *motor*

or mechanical force, and whose whole organism is incessantly maintained by the operations of the *chemical* and *physiological* forces which digest his food, convert it into the various tissues of his body, and again reconvert those tissues into the simpler forms in which, when they have served their part, they are eliminated from the system—hence does he obtain all these forces, or, more properly speaking, all these different varieties of force, which are so indispensable to his existence? Here, too, we must recur for an answer to these questions to the great law of the relations of waste and power to which allusion has before been made. The human body is continually wearing away; as truly, though perhaps not so evidently, burning away as if it were a bushel of coals in a domestic grate. And it is from this ceaseless process of waste which is going on every where within it, that it derives the power which it expends in the various forms of work which it continually carries on. There are probably very few of the readers of this article who have the faintest idea of the amount of force which they are exerting every day of their lives. Let us see if we can manage, without wandering into details whose due appreciation would require a knowledge of the more profound departments of physiology, to form an estimate of the amount of work which the body of an ordinary man performs in the twenty-four hours, and of the waste of bodily substance of which that work is the equivalent.

We may roughly divide the constituents of the animal frame into three groups. In the first we will place those substances which are actually incorporated into its organization in the shape of bone, muscle, nerve, etc.; to the second we may assign those which are destined to minister to the building up of the animal fabric, in the shape of the raw materials derived from the digestion of the food in the alimentary canal, and in the third we shall place those constituents which, having discharged their functions in the animal economy as elements of the various tissues, are thrown off as waste, and as such give rise to what are commonly known as the excretions of the body. It is obviously to this last class that we must look for the measure of the wear and tear of the body and of the evolution of force of which that wear and tear is the exponent.

Now, of all the different substances

which are thus thrown off from the body as the result of the decay which is continually going on within it, there is one, urea, which is preëminently important, not from its mere predominance in bulk over all others, but because it is the one which gives us the most accurate gauge of the amount of waste of which it is the product. If we were to be told that the quantity of urea which is daily manufactured and eliminated from the body of a healthy man, weighing about one hundred and fifty pounds, varies from four hundred to six hundred and thirty grains, it is probable that many of us would not be much the wiser for the information. We must, therefore, see if we can learn what this represents in another way.

The daily work which is performed by the body of an ordinary human being may be classed under four heads. (1) There is the *vital* work, or that which is required to keep the machinery of life going and in proper order; *e. g.*, to make the heart beat, the stomach digest, the liver secrete bile, and so on; just as a certain portion of the power of a steam-engine is expended in merely moving the machinery which it sets in action. (2) Then there is what may be called the *calorific work*, or that which is required to maintain the temperature of the body, and which will obviously be much greater in winter than in summer, and in cold climates than in warm ones. Although this is intimately connected with the preceding variety of work, still it is for many purposes sufficiently distinct and important to justify our considering it under a separate head. (3) Next we have the *mechanical work* which is involved in the physical exercise we take, such as walking, talking, eating, etc. (4) And, lastly, there is the *mental work*, which we each of us perform in the acts of thinking, seeing, hearing, and in the exercise of our nervous functions generally. One of the great problems which physiology has of late been endeavoring to solve is, how much of the total daily work of the body is absorbed by each of these four departments of bodily activity separately; or, to put the question in another point of view, how much of the total daily waste of the body is due to them severally? The recent researches* of a distinguished medical divine—for, by a strange coincidence, though a clergyman by profession he is

also a physician by education (the Rev. Professor Haughton, M.D., F.R.S., of Trinity College, Dublin)—have thrown a good deal of light upon this obscure and difficult subject. With the view of giving our readers a general idea of the relations of bodily work to bodily waste, we will briefly recapitulate the nature of these researches.

We have before stated that the total amount of urea which is formed in the body of a healthy man of one hundred and fifty pounds weight, *per diem*, fluctuates from four hundred to six hundred and thirty grains. Of this amount Dr. Haughton calculates, from data to which it is impossible for us here to refer, that three hundred grains are the result of that division of work to which we have above given the designation *vital*. Hence it follows that each pound of man requires an amount of daily waste which is represented by two grains of urea merely to keep it alive, and prevent it from becoming subject to the ordinary chemical laws of inert matter.

But if this three hundred grains of urea represents a certain amount of bodily waste, that bodily waste in its turn represents a certain amount of work done, or force expended; and to estimate what that work is, we must find out the equivalent, in some definite and easily calculable form of work, of a definite quantity, say one grain of urea. This Dr. Haughton has done. But before stating the results at which he has arrived on this point, it should, perhaps, be mentioned, for the benefit of those to whom this subject may be entirely new, that it is usual to calculate all varieties of mechanical force in terms of a single unit, and that unit is the force which is required to raise one ton avoirdupois one foot from the earth. For instance, a man who walks twenty miles a day can be shown in so doing to perform an amount of mechanical work which, if applied in another way, would raise a weight of one hundred and fifty pounds, that is, about the weight of his own body, one mile in the air. Again, the ordinary daily work of a street pavior, who works ten hours a day, and whose occupation consists in lifting, at definite intervals, a rammer weighing five and a half stone, is equivalent, if applied as before mentioned, to lifting a weight of one ton three hundred and fifty-two feet in the air. In this way the foot-ton, as it is called—that is, one ton lifted one foot

* *Dublin Quarterly Journal of Medicine*, 1859, 1860. VOL. LXI.—NO. 3

—becomes the unit of measurement of dynamical force generally.

Now, let us recur to the consideration of the force which is expended in the daily waste of three hundred grains of urea. From a series of elaborate calculations Dr. Haughton estimates that the mechanical equivalent of this quantity of urea is one ton lifted seven hundred and sixty-nine feet, or seven hundred and sixty-nine foot-tons. That it is to say, this enormous force—a force which is more than equal to that expended by two street paviers during a hard day's work, is used up in merely keeping a man of one hundred and fifty pounds weight alive for the same period. We may put the same fact in another point of view by saying that the amount of force required for this purpose would lift the man's body a little more than two (2.18) miles in the air during the twenty-four hours.

From similar, though perhaps somewhat more doubtful calculations, Dr. Haughton estimates that the amount of bodily waste which is caused by one hour's hard mental labor involves an expenditure of force which is equal to lifting one hundred and eleven tons one foot in the air.

Let us further suppose that, in addition to the mere act of living, an average man of one hundred and fifty pounds weight undergoes bodily labor equivalent to lifting two hundred tons one foot daily, and that the total amount of his day's mental work is equivalent to two hours' hard study, and the "little bill" of his daily expenditure of force will stand as follows:

Vital work,	800.00 grains of urea =	769 foot-tons
Bodily work,	77.38 " " =	200 "
Mental work,	86.00 " " =	222 "

Total urea, 463.38 = 1191 tons raised one foot; or one ton raised 1191 feet; or the weight of the man's body (150 pounds) raised a little more than three miles.

To balance this side of his debtor and creditor account, our average man would have to consume an amount of food sufficient to furnish him with the nitrogen contained in four hundred and sixty-three grains of urea. Hence, he will find it desirable to take a considerable portion of animal food in his diet, because that kind of food contains, in proportion to its bulk, a much larger quantity of nitrogen than vegetable substances do; for

if he does not do this, he will have to augment the amount of vegetable material which he ingests to such an extent as seriously to embarrass his digestive functions. It is for this reason that the laboring man, who can not procure meat for his daily meal, has recourse to cheese, which, although difficult of digestion, contains a considerable quantity of nitrogen.

But, the reader may not improbably ask, if all this enormous quantity of force is expended by a living man during the short space of twenty-four hours, whence does it all come? And this is a question which it is by no means easy to answer clearly within the limited space which is left to us. In general terms, however, it may be said that the force which the animal economy expends in the discharge of its various functions, is intimately incorporated with the food which it ingests for the support of its material framework. Animals live at the expense either of other animals or of vegetables—in both cases of previously organized structures. Every process of organization involves the absorption and fixation of force in the created organism. Hence every organized structure is, as it were, a reservoir of force. The force which the plant receives from the solar heat is stored up in its cells, to be dispersed again gradually to the atmosphere in the shape of heat when it decays, or rapidly, when it burns as coal; or, if consumed by an animal as food, is incorporated, with the elements of the plant, into the tissues of the animal which consumes it. These animal tissues thus become storehouses of power, which, as they waste and decay, is given off in the various forms which their peculiar character adapts them to eliminate. Thus the nervous tissues give it off as nerve-force; the muscles, as motor force; the fatty elements of the body, as heat; and so on. One of the most interesting branches of Dr. Haughton's researches is the determination of the amount of force which is stored up in human muscles.* By a series of careful observations and calculations, he finds that the muscles which sustain the arm in a horizontal position—the central portion of the deltoid and the supraspinatus—weigh $5\frac{1}{2}$ ounces, or $224\frac{1}{2}$ grains, and that the work which they do in sustaining

* *Outlines of a New Theory of Muscular Action.* 1863.

the arm until it becomes exhausted is equivalent to lifting half a ton through one foot. Hence it follows, that one pound of such muscle contains, stored up in it, sufficient force to raise 1.56 ton through the same distance. This statement will go far to explain the origin of a portion, at least, of the force which is expended daily by the body of a living man. When it is remembered that during his waking hours the voluntary muscles of man are rarely at rest for more than a few seconds together, it will be seen that we have, in their constant waste alone, a fertile source for the evolution of force. But it is to the action of the involuntary muscles that we must look for the most abundant origin of the force which he is ceaselessly eliminating, and more especially to that most important of all the involuntary muscles, the heart, which, from the time he draws his first breath till his eyelids close in death, is never at rest. Most persons are aware that the heart is simply a muscular bag, divided into four cavities, and that the circulation of the blood through the blood-vessels, which is so essential to the maintenance of life, is mainly due to the force with which the muscular walls of the heart contract on the blood as it passes through these cavities. Few, however, would imagine the force which this small fleshy bag—no larger than one's double fist, and only weighing about nine ounces—exerts on the mass of blood which it is called on to propel. Dr. Haughton has most ingeniously estimated that the force which the heart expends in the twenty-four hours is equivalent to lifting one hundred and twenty-four tons one foot! This estimate would be almost incredible, if it were not obtained by two totally different methods of calculation, used as checks upon one another. And if this amount of force is

expended by the heart in twenty-four hours, how rapid must be its waste, and how vigorous must be the nutrition by which that waste is repaired. Few instances could be quoted which show more forcibly than this does the wonderful perfection of adaptation, and the concentration of activity which the higher organized structures exhibit.

To those who are not familiar with the subject of physiological dynamics these statements, generally, will probably appear little short of incredible, so difficult is it for the imagination which is untrained in the teachings of science to realize the fact, that the apparently simple and unlaborious functions of mind or body can involve the expenditure of force at all. The most unscientific observer can not fail to perceive that the arm which works the pavior's rammer, or the legs which bear the weight of the body over the many miles of a long day's walk, must, in the performance of these offices, exert a considerable amount of force; but he does not so readily appreciate the manifestation of the same phenomenon in the silent decay of the whole body when at rest, or in the unconscious exercise of the mind. Those, on the other hand, who have learned with what a mighty energy nature works even in her most simple operations—that the force which holds the elements of a single grain of water together is equal to that which is contained in a very powerful flash of lightning, will know that, although there are some of Dr. Haughton's calculations which, from the uncertain state of our knowledge, must at present be received with some degree of reservation, the general character of his results is quite in unison with the dynamical laws which the researches of Joule, Mayer, and other physicists have during recent years established.

READY FOR THE LAST JOURNEY.—Mr. Philip Henry said to some of his neighbors, who came to see him on his death-bed: "Oh, make sure work for your souls, by getting an interest in Christ while you are in health. If I had that work to do now, what would become of me? I bless God I am satisfied. See to it, all of you, that your work be not undone when your time is done, lest you be undone forever."

ONE of Dean Trench's sermons on the subject "What we can and can not carry away when we die," commences thus appositely: "Alexander the Great, being upon his death-bed, commanded that when he was carried forth to his grave, his hands should not be wrapped, as was usual, in the sorcloths, but should be left outside the bier, so that all men might see them, and might see that they were empty."

From the Dublin University Magazine.

THE RING OF GYGES.

THE PLAIN OF SARDIS.

It is a splendid Asiatic summer noon. Goldenly from the deep azure zenith glows the sun over Lydia. To the north, dominating the plain, the city of Sardis, with its citadels, palace, and temples, glitters whitely on the crests of Mount Tmolus, whose declivities, draped in vineyards, descend in outlines of indolent majesty to the borders of the broad river Pactolus, which winds sinuous and bright across the plain to the south—at one turn mirroring the blue air, at another breaking into a hundred prismatic lights—like some mighty and superb serpent stretched in repose along the land, and reflecting its colors as it breathes in sleep. To the east extend a range of gray mountains, whose jagged peaks and pinnacles of silver and snow serrate the remote horizon; while here and there to the south appears some steep mountain town, with long flights of steps cut in the ravines from base to summit, ranges of rock tombs honeycombing its granite sides, and benched amphitheatres fronting eastward. East and west of the river expands the rich plain—here undulating into dells, amid whose dark green groves of walnut and myrtle, white villages, with their wooden pillared houses and flat roofs, (which formed the model of the Greek temple,) gleam slumbrously in the affluent sunlight; here spreading away in leagues of pasture—in fields carpeted with cistus, crocus, and anemone, amid which many flocks feed, scattered in long drifts across the peaceful levels, dotted with their clustering pens, and intervalled at wide distances by some magnificent plane tree and large-leaved oak, whose patriarchal trunk and gnarled boughs have assumed gigantic proportions amid the suns and rains of centuries.

Scarce a sound breaks through the sunny silence of this pastoral region—scarce a movement of life is seen during the drowsy noon-day hour; the lizards lie

hid in the leaves—the tortoise basks on the river sand, and it is only at long intervals that the ear of the lazy shepherd thrills with the notes of the woodpeckers in some cluster of wild pear or juniper trees; or that, gazing towards the misty northern distance, with its horizon of wooded and snowy hills, he sees some long trains of camels and caravans slowly threading the mountain road from Babylon or Persia, and winding through the heavy heat towards the turreted gates of Sardis.

Among the shepherds of the king's flocks there is a youth named Gyges—a gay Lydian, well known among his comrades for his daring and adventurous disposition, and amid the maidens of the hamlets for the art which he displays on the reed and flute during festal evenings, when many a group beat the ground in the joyous and voluptuous dances for which the region is celebrated. Like the rest, he has been slumbering during the noon—while the chameleon near changed in color like a bubble, while the long lines of locusts crossed the sky—reposed in the hollow of a great plane tree near the river, in the cool shadow of its thick verdurous dome, through which as he sleeps the moving sun piercing in golden stars gleams on a dark face of strange beauty, on a high brow shaded with long ebon locks, and a finely-moulded frame of great strength and activity. His costume differs from that of his fellows, rudely garbed in sheepskin; for it is made of the hide of a lion, which he had slain, tastefully formed, and bordered with cloth, red as blood. At times, as he sleeps, a dream passing through his mind evokes strange shades and expressions on his face, shadowed by the leaves of the great snake plant, which twines round the sides of the tree; and occasionally he extends his arm with an ambitious movement, as though grasping some invisible object of his imagination.

The meditative life led by this young shepherd had developed a tendency to

thought; but though he was merely noted among the villagers for excelling in the simple accomplishments of a herd, he was himself conscious of possessing an innate mysterious power, which gave intensity to an originally strong personality, and which as time passed and reflection deepened, had slowly shaped a character differing widely from that of his comrades—a character dominated by vague aspirations, and an instinctive love of power. The occasion on which he became conscious of this innate influence was as follows: Once at a village festival in which he and the Lydian girl, his partner, had won the prize in a dancing contest, they had wandered into an adjoining wood; the girl was heated with the exercise, and Gyges, who was fanning her face with a fold of his lion-skin, was suddenly surprised at finding her drop into a deep sleep. At first, believing she was feigning, he paid little regard to the circumstance; but presently became alarmed, when he found that despite his calling on her to arouse herself, she still remained insensible. After a period, he bethought him of uttering a charm, which, according to custom, was accompanied with a waving of the hands before the face; and presently, when he had fanned her forehead with his robe, she awakened. It appeared to Gyges, however, that the trance into which the village maiden was thrown must have resulted in some invisible influence of his genius; and as subsequent trials were followed by the same consequences he became aware of possessing a mysterious power, the consequences of which strongly influenced his nature and mind. Some time after this an event occurred which marked him among his fellow-men to a peculiar destiny.

As the sun began to decline from its burning height a few figures were seen moving across the plain: women bearing to some shepherds their repast of bread and fruit, followed by girls with water vases on their heads; then the herds, who, having dispatched their rural dinner under the trees, stretching in the flowery herbage, amid which the lambs were playing, began to wile the remaining day with their long flutes and reeds, evoking pastoral songs of love and traditional legends of the region, as customary on those long-drawn summer days.

At length, as evening came on, a singular change appeared in the sky. Although

the sun was nearing the western mountains, instead of the refreshing breeze which usually breathed from their summits, the heat of the air continued oppressive; a vapor, first red and then grown lurid, rising from the horizon, rapidly covered the sky, in which a dead calm reigned. Presently a tumult of black clouds rose in the west, deluging the orb of the sun in blackness, and advancing across the firmament, which, though grown sudden dark, was at moments pervaded by a strange and ominous light. The shepherds, struck with sudden consternation at those unaccustomed appearances, had already begun, some to collect their flocks, some to hurry to the neighboring villages, when thunder at a great elevation rolled overhead—at the same instant the earth trembled; and an unusual feeling of awe struck the hearts of all living things, as they recognized this somber sympathy between the heights of the sky and the depths of the world; for it seemed as though the gods were signaling the hour of its destruction. Then a few great drops of rain fell, the prelude of thick darkness, and the plain began to heave like a storm-convulsed ocean.

Awed by the terrors with which he was surrounded, Gyges, like the other shepherds, had forsaken his flocks, and aided by a wild glare which began to pervade the sky, hurried as rapidly as he was able toward the village near which his cottage stood—a village which lay at the opposite side of the nearest mountain. Frequently the earth-shock caused him to pause, tottering and uncertain whether the next moment the ground might not open at his feet and engulf him. At length, after about an hour had passed, he reached the ravine through which his way lay. Here, however, the dangers thickened: masses of crumbling *débris* and stones began to descend the sides of the mountains, which, trembling to their foundation, seemed threatening ever and anon to topple over and bury him beneath their stupendous rocks and precipices. At every step death seemed present.

Already he had advanced half-way through the steep glen, and in an interval of calm, hurried with desperate haste forward in the light of a level streak of cloud which hung over the adjacent valley; when suddenly the ground heaved with a tremendous convulsion, and as with a despairing shriek he looked upward, he saw the two sides of the ravine meeting over-

head in an awesome roof, which shut out the sky. The next instant, stricken down and stunned, he sunk into unconsciousness.

How long he remained buried in this dread stupor, he knew not; when, however, his senses returned, he found himself in a vast cavern, as it seemed, and in utter darkness. Around him dead silence reigned; but as he sprang to his feet and listened, he presently became conscious of a distant sound, as that of a torrent rushing through some gloomy channel, and presently he began to feel his way with fearful and cautious steps toward the place from which the watery noise issued, animated by a hope that by following its course he could possibly find an exit into the world of day.

He had not advanced far when a gleam of hope broke on him; the sound of the water grew nearer, after a little he observed the reflection of a star on its surface, and looking up beheld—oh, joyful sight!—a blue space of sky glimmering through the distant cavern's mouth, and illuminating the rock-strewn path leading in that direction.

It was at this moment, while his heart throbbed tumultuously under the revulsion of feeling arising from the terrors he had passed and the certainty of safety and life, that advancing along the path which skirted the torrent, he came to a point where, turning to the right, another branch of the cavern extended. Pausing for a space at its entrance, and gazing into its gloomy arcade, he was surprised to perceive a distant light, which, as he approached, shed an illumination along the walls and floor, faint indeed, but sufficient to guide him securely to the point whence it emanated.

But a few moments elapsed before he found himself in a small chamber which appeared to have been hewn out of the rock; and a shudder passed through him as the light of a lamp, streaming from the low roof, fell on a gigantic figure, naked and white as snow, which lay on a colossal altar of black marble, reposed in an eternal sleep.

When the first sensation of superstitious awe and wonder inspired by this sight had passed, Gyges closely examined this singular body, which seemed as indestructible as the rocks amid which it had been for ages entombed; and recollecting a tradition familiar in the country, of a race of giants who inhabited it before man,

and whose kings—so said the legend—were buried in the midst of their treasures, he presently began to examine the chamber with an excited hope of discovering coffers of gold and caskets of jewels. Nothing of the sort, however, appeared, nor did the rude stone floor or the walls, which were excavated from the solid rock, exhibit any trace of concealed recess or lower opening; and struck with a sudden apprehension lest some earthquake shock might recur, and inclose him for ever in this gloomy penetralia of the mountain, he was about to make a hasty departure, when, glancing at the body, he perceived on the little finger of the right hand which covered the heart of the colossal corpse—a ring. Inspecting this mortuary ornament, he found it was a simple circle of green stone, and when, after a pause of hesitation, arising from the fear lest some supernatural event might occur should he touch the sleeping mystery, he approached and removed it from the hand, he found, as the light of the lamp fell upon it, that it neither contained any precious setting nor any tracery, save one curious hieroglyphic on the seal. Valueless as it appeared, he nevertheless resolved to preserve it as a memento of an adventure so wonderful; and placing it on his finger, after a hurried glance at the motionless giant, he hastened back through the passage, and after clambering over the rocks along the torrent side, was finally fortunate enough to reach the cavern mouth, and emerge with beating heart once more beneath the sky, which was already brightening eastward with the level fires of the dawn clouds.

The earthquake of the preceding night had left little trace of its action, except in the mountain ravine, across which two great peaks had fallen. The adjoining plain appeared as heretofore, and even the village in which he dwelt had suffered but slightly. Gyges reached his cottage, and after conversing with his neighbors on the common terrors they had experienced, (for, strange to say, some mysterious and irresistible impulse by which he felt himself controlled, prevented him narrating his marvelous adventure,) he set out again toward the plain occupied by his flocks. On, however, reaching the part of the mountain from which he had escaped from the awful subterranean world within, another wonder awaited him, a vast mass of earth and rock had meanwhile become detached from the mountain side, covering

some hundred feet deep the mouth of the cavern.

A moon had rounded and died after this dread event and singular adventure, and the terror created by the earthquake had well-nigh subsided, when a Lydian festival took place in one of the neighboring villages, at which Gyges, as usual, attended. The hamlet stood on the skirt of a rich aired woodland in a golden sunset valley, and here the gayest shepherd youths and loveliest maidens of the plain, crowned and garlanded, after passing some hours in jubilant dances—dances performed with wine cups in their hands, which were laughingly drained, now as a measure came to a termination, and refilled as another commenced—the musicians seated under the trees accompanying them with lyre and flute; when the rising of the moon heralded the hour for feasting and song.

As usual the feast was held in the village temple, a small wooden-pillared building, which was decked with leaves and flowers for the occasion, and illuminated with pine torches. Ranged round the central board, the joyous folk had passed the hours with love-making, minstrelsy, and story-telling; and it was already midnight, when a girl, into whose ear Gyges had been whispering some pastoral compliment, gayly gesticulating the while, suddenly caught his hand, and after inspecting the mysterious ring which he chanced to wear on this evening, inquired why he preferred an ornament of rude stone instead of gold, such as his comrades sported on festive occasions.

Gyges said he had carved it himself from a piece of stone he had found some time before on the mountain side; and the eyes of several of the revelers were bent toward them, as the girl turned it round his finger, examining the seal and the mark with which it was traced—when suddenly he was surprised to hear several persons exclaim in astonished voices:

"Where is Gyges?"

"Here," he answered, laughing.

"Where?" cried the feasters, in tones of great wonder.

"What humor has taken you, my friends?" he inquired, in grave amaze.

"Have you lost your reason?"

At this moment all rose.

"Did you see him depart?"

"No."

"Or you?—or you?"

"No."

Gyges.—"What madness has seized you?"

All.—"Whence comes that voice?"

Gyges.—"From me, Gyges. Surely you have lost your sight, or some magic influence possesses you. I, Gyges, am here—here where I sit."

All.—"This is miraculous; some demon has charmed him or us. Save us, great Pan, from the spells of genii and witches—save us!"—and they then threw themselves prostrate on the ground.

At this instant something caused Gyges to search for the ring on his finger, and in so doing he found the part which bore the hieroglyphic had been turned inward, and by an involuntary movement he turned it outward, as he had been accustomed heretofore to wear it.

Upon this, all gazing on him, cried: "Behold him! behold him! Alas, wretched Gyges, you are under the influence of magic."

Then, perceiving that this marvel resulted from change of position in the ring, he turned the seal inward and outward repeatedly, and as he did so found, from the faces of the assembly, that he became alternately invisible and visible to mortal eyes; and while the revelers fled terrified from the temple, filled with wondrous sensation, he also, finding himself alone, presently departed across the plain.

On reaching his cottage, Gyges threw himself on his couch, but for several hours sleep escaped him, while his mind thronged with imaginations vast and various—of powers and pleasures, of good and evil; and the first streak of dawn already divided earth and sky with a fringe of fire, when, intoxicated with his treasure, and fearful lest he should lose it while unconscious, still grasping it tightly, he sunk into slumber.

ELEUSIS.

AFTER the event just described, Gyges became an object of the profoundest awe among the simple, superstitious, rural folk, amid whom he lived, who, regarding him as the victim of some magical spell, avoided encountering him, muttering counter-charms when such occasions occurred. Intelligence of the singular gift of enchantment which he was supposed to possess reaching the ears of Candules, King of Sardis, the latter demanded his presence in the palace, and though overwhelmed

with amaze when Gyges displayed his power of becoming alternately visible and invisible, he presently bethought him, finding the shepherd a man of aspiring character and endowed with a keen intelligence, of rendering him instrumental in forwarding the policy of the throne. In a word, having bestowed upon him a considerable sum, and given him an appropriate train of attendants, he dispatched him as an envoy to the King of Armenia, who was then meditating a descent upon Lydia, with instructions to inform himself of the monarch's designs, and communicate with his sovereign. This mission Gyges, so gifted, performed to perfection, having acquainted himself with the most secret projects of the hostile monarch. Upon his return to Sardis, Candules loaded him with wealth, and would have made him his chief minister, but that the adventurous, ambitious character which Gyges had gained for the possession of his miraculous ring rendered such offers, for the time, nugatory. Shortly after, therefore, being desirous of consulting the oracle at Delphi, with the king's permission Gyges set sail for Greece, where he arrived, as it happened, in the autumnal months, signalized by the opening ceremonies of initiation at the temple of Eleusis.

The thin crescent of the moon hung low in the solemn azure of the midnight sky, when Gyges entered the vast temple of Eleusis. Two days were passed in taking part in the processions of the goddess and the prefatory rites of initiation, and at length came the third, when the neophyte was to undergo the superior trials of air, fire, and water, to be permitted to enter the mysterious chamber where the passions of life were imaged and its destiny unfolded; and, lastly, to be afforded a vision of the realms of Elysium and the gloomy regions of the dead.

The awful lights and darkness, the mysterious voices and music, which filled the air during his contemplation of the wondrously managed drama of existence and destiny, were indeed well calculated, by affecting the imagination, to prepare it for the culminating terrors and splendors of the final scenes of initiation; and, despite the profound insight which his magical power had given him into the motives and machinery of general life, it was not without a feeling of fear that he followed the hierophant to the chamber from which he was to descend into the regions of

subterranean darkness. Seated, as it seemed, in a winged chariot, he felt himself descending, for upwards of an hour, into the depths of the earth, in silence and profound gloom. Arrived at the bottom of the gulf, a long arcade, dimly illuminated, opened; and as he advanced he was joined by the hierophant, who, leading him through a gloomy cavern, to what seemed the summit of a precipice, shrouded in gloom, waved his wand and announced the vision of the Land of the Dead.

Advancing with cautious footsteps through the impenetrable gloom of this narrow subterranean path, the hierophant, who held his hand, caused him to pause at a certain point, a few feet in advance of which the mountain's side precipitously descended. Looking beneath, Gyges perceived an immense plain, which stretched away to a dark horizon, crossed by a level streak, dimly gleaming, like a distant sea. Across this vast region long trains of shadows were seen passing from a ravine between two remote, stupendous mountains, like drifts of dark clouds, towards a mighty city, whose huge black towers, palaces of judgment, and halls of atonement, piled in colossal majesty, dominated the region, while fires, fierce and cruel, glared from the inner chambers and pinnacles, which ascended until they were lost in, and mingled with, the firmamental dome of impenetrable shadow. From the gigantic portal of one great structure in the center of this city, through which an awful Figure was seen, seated on a throne, a glare of level light fell on a black river flowing round the walls and far across the plain; and as it illuminated the faces of the endless army of shadows advancing, Gyges perceived, that, although they bore an unusual aspect of terror and regret, their countenances as they approached nearer the burning throne of the judgment hall, bore amid endless variety, an expression of all the varied passions of humanity.

As one mighty multitude swept across the river and gathered in silent and gloomy circles beneath the throne, occupied by the presiding figure, a sound, as of thunder, which had ceaselessly muttered through the dark cavernous clouds of the upper firmament, suddenly broke above the city, terroring in peals of such concentrated wrath and vengeance, that for the time its deep foundations shook and the infernal heaven seemed threaten-

ing its overthrow and ruin. Then Gyges saw the shadows, one by one, called to judgment; as each passed, the lightning eyes of the potent minister becoming fixed on their hearts—read in a swift and single glance the history of their lives on earth, and adjudicated their destiny. On either side of the throne the hosts of the blessed and the doomed were seen to form, and as the judge signaled his attending powers each were hurried away—the one heralded by music whose happy strains seemed to pass in vibrations of joy, towards a bright region beyond the shining sea, the other by soul-terrifying thunders, which, raging over and following the dark hosts of despair, seemed to roll to some remote realm in the depths of the subterranean infinite, where, beyond the fiery cataracts of Phlegethon, darkened the land of eternal punishment, of everlasting sorrow, and despair.

Suddenly, a thick cloud possessing the region terminated the vision. Presently a light, as that of day, broke upon a new world, and series of new scenes, and Gyges beheld, passing in succession before him, the history of the gods and the mighty heroes, their offspring. First, from the chaotic tumult of the yet commingled heaven and earth, a group of giant forms, rude as the rock, yet crowned with a celestial brightness, were seen to arise, and preside over the prospect of mountains and seas, assuming distinctness, and of a clearing firmament, with its glittering stars; then a vision of a green and fruitful region, inhabited by a happy race, who dwelt in plains filled with flocks and yellow with corn, and in remote cities on the mountain summits, where Saturn reigned. Then the age of peace and plenty gave way to a scene of war and devastation; armies of giants were seen advancing under a flaming sun, from the wild fastnesses of the earth, and contending with heaven itself, until overwhelmed with the thunders of a warlike king. These, and many other scenes, from time to time, arose before the vision of the neophyte, and hours passed while he gazed attentively on the history of the world from the age of the gods until that of the war of Troy.

When, after the above series of visions had passed, the hierophant left Gyges alone, as customary, to permit the impression of the awful world of death to work upon the imagination, the latter render-

ing himself invisible began, having procured a torch, to examine the place in which he was. It was not without laughter he discovered, that he had been gazing through a series of magnifying glasses on a number of puppets moved by machinery in an underground chamber, and that the awful drama which had so affected his fancy and emotions was the result of a toy.

After visiting Eleusis, and consulting several of the most famous oracles, whose mysteries, like those of the holy town, vanished under his examination, Gyges passed several years in traveling from city to city, and through the various nations of the earth, Greek and barbarian. Immense, during this interval, was the experience which he gained of the nature of races and humanity in its manifold phases, from the palace of the monarch to the hut of the savage. Gifted with invisibility, all varieties of life, the inmost secrets of the heart became known to him, and he alternately drained the cup of pleasure and reveled in the exercise of almost unlimited power. Unharméd, he escaped every danger; recklessly he reveled in every delight; and while his nature, moulded by the exercise of supreme dominion over mortal souls wherever he wandered, assumed a demoniacal cast, he already conceived himself to have attained to the being of a god.

After ranging the earth from the regions of civilization to those still enveloped in the cloud of fable—from the flaming skies of the tropic to the snows of Scythia—from the gardens of the Hesperides, in the shadow of Atlas, whose terrors and beauties sunk into commonplace, disenchanted by observation, to the fabled realm of phantoms in the ignorant, deserted realms of cloud and snow—now hurrying through the seas, and along the western shores, amid races scarcely less savage than the wild animals with whom they lived in common—through the lairs of monstrous forms in the remote fastnesses of creation giants of the ocean, the earth, the air—and now reveling among the most luxuriant of the world, in the cedared halls of Nineveh and Babylon—Gyges eventually returned to Lydia. Then, as laden with riches, and attended by a numerous train of slaves, he entered the gates of Sardis, sated with pleasure and experience, one desire only remained in his haughty and arrogant soul—that of reigning.

Received with the highest honors and the supremest pomp by King Candules, who, rejoicing at his return, and conceiving that he could utilize in the furtherance of his policy the mysterious gift possessed by his guest, Gyges already began to entertain the most ambitious dreams of empire. He took up his residence in a palace allotted him, and by lavishing largess and gifts amid the nobles of the court and the people, well-nigh outshone the monarch in magnificence.

Among other gifts bestowed by Gyges on the king was a beautiful slave, named Paipha, whom he had purchased for a vast sum in one of the Ionian cities, where, on her arrival from those northern mountains lying between the great inland seas, where her race—said to be the handsomest among the people of the earth—had their habitation, she had been educated by the cunningest masters and mistresses in music, dancing, and such like arts, as ministered to the luxury of Asiatic palaces. Suddenly, enchanted with the charms and graces of this lovely odalisque, Candules appeared to forget his projects of power; he passed days and nights in revel, and, for the time, the festal garland, the cithara, and wine-cup, rather than the scepter, became the symbol of his majesty. From this dream, however, he might have shortly reawakened, but for the jealousy with which his queen, Nyssea—who was a daughter of the oldest and most potent line of Persian kings—regarded the changed demeanor of the monarch, the loss of his heart which she had won by her beauty, while she added possessions to his throne, and the degrading indolence in which Candules, once renowned as a warrior—now turned out an effeminate sybarite—was plunged. Presently, however, as time rolled on, and increased the king's indifference to his consort, who never entered his presence—indeed seldom beheld him, except when accompanied by Paipha, he descended to the gilded barge, for moonlit revel on the bosom of the bright river—the jealousy with which Queen Nyssea had been smitten became inflamed into revengeful rage, and this passion soon led to events whose thread was woven in the darkest and most tragic loom of destiny.

Simultaneously with the success of the plans which Gyges had thus laid for the attainment of sovereignty, his intimacy with the queen (who at first regarded

him with fear and antipathy, as the chief cause of the alteration of conduct manifested towards her by Candules) increased; nor during the now frequent interviews which occurred between them in a palace plunged in riot, did he lose the opportunity of working on the darker passions of her being, and seeking, by attracting her confidence, to establish himself in her heart, thus unworthily abandoned by the king. Nyssea, however, whose tact equaled her beauty, possessed a character, strong, ambitious, revengeful. The furies of outraged affection and dignity, reigning sleeplessly in her soul, sternly guarded its doors against the admission of a second passion, except under such conditions as would render its inspirer the instrument of her designs. A number of feelings, some fixed, some fluctuating, agitated her breast—hatred of Paipha, hatred and contempt of the king, antipathy of Gyges, alternating with a softer emotion; but the latter, despite his attractive person and even supernatural gifts, found that neither could he touch the heart of the queen nor accomplish his ambitious purposes without acquiescence in the demands of her imperious will, whose direction he was at little loss to discover.

THE PALACE TERRACE.

It is evening: a magnificent sunset flaming along the west, and tinging with fire the palace of Sardis, glows goldenly on the fountains and arbors scattered along its lofty-terraced gardens, from which, for many a league, the rich surrounding country can be seen, with its plains, mountains, rivers, and woods, mingling in a superb panorama. The only figures which appear in this luxurious resort are Gyges and the queen; and as they pace to-and-fro, wrapped in converse, the light flames on her angry forehead and on the strong, dark, mysterious eyes and daring face of her companion. Presently a train of horsemen are seen approaching the palace gate, surrounding a chariot in which a female figure reclines, under a silken canopy. The queen averts her face, on which centers an expression of mingled rage and disdain.

As suddenly they pause beneath the colossal statue of a giant king, which throws its shadow along the terrace, a dark cloud crossing the sun swiftly broods over the sky—a peal of thunder startles

the echoes of the mountains—a gloom falls on the gardens and palace.

Gyges.—The king returns from hunting. How passes he the night?

Nyssea.—As usual, in sottish revel with this wretched slave. Ah, Gyges, hadst thou ambition, thou mightest be king.

Gyges.—And share thy throne?

Nyssea.—Ay.

[*A pause.*]

Gyges.—Thou knowest the passage leading from my palace to the private chambers of the king; of late the entrance door from that side I have ever found locked. You understand?

Nyssea.—At midnight, when he is asleep, I will open the southern portal; then, invisibly, thou canst enter, and—the morning finds thee on the Lydian throne.

Gyges.—So; let's pass the interval with feast and music; beautiful Queen, thy word wields my will.

[*Thunder.* *They enter the palace.*]

THE KING'S CHAMBER.

It is midnight, and the clear full moon looks from the blue Asian sky upon the palace of King Candules, all whose inmates are at rest—all whose splendid halls are wrapped in breathless silence. The king, wearied with the hunt, in which he had passed the day, and lulled by the wine of the banquet, which had crowned the night, and who has been for some hours buried in repose, reclines on his couch, in a chamber through whose open marble casement the warm moonlight streams, illuming his dark bearded countenance and bare breast, from which, in a movement of slumber, the purple coverlid has been thrown back. His pillow is sprinkled with opiate blossoms, several of which lie strewn on the rich tessellated floor, which is scattered with flowers, and silken robes, and golden ornaments, wine vases, and weapons. On one side of the still bright window lies a great heap of roses, whose perfume mingles with that of the odoriferous trees embowering the garden terraces beneath, as the gentle air breathes into the still room, bearing the almost inaudible sound of a fountain, whose drizzly sprays seem languishing to rest, as though they, too, were influenced by the pervading presence of the midnight spirit of repose. So perfect is the bright calm in the royal chamber, that even the flutter of a

rose-leaf can be heard; and the only object therein which gives evidence of movement and life is a beautiful tame snake, which, stretched in an indolent emerald coil along the snowy marble, gorged with feasting on a heap of fruit, now and then sidles its crested head playfully among the perfumed clusters of nectarines, grapes, and melons.

The midnight star has just dipped beneath the silvered roof of the western woods, and a single breath of awaking wind has for an instant undulated the silken tapestries, when a female figure, with dark hair floating over her disarrayed robe, and wild and earnest watchful eyes, steals stealthily with bare feet along a passage, and reaching the open portal, pauses a moment; then glancing, as she holds her breath, at the royal sleeper, crosses towards a door at the opposite side of the chamber, and withdrawing a key from her bosom, and inserting it into the wards with fearful caution, opens it noiselessly. A little, and with another glance at the couch, she crosses the chamber, silent as a cloud, and hastily vanishes. It is the Queen.

There is a pause of some minutes; and, lo! at the same door through which the royal lady entered, beautiful Paipha appearing, silently advances, with upraised arms wound languidly over her head, and half-closed eyes, as though just awakened from slumber. Approaching the couch, she bends for a space over the king, in an attitude partly expressive of awe and of voluptuous indolence, the clear beams lighting in an amorous halo the graces of her white-robed form, whose flood of ebon tresses, half veiling the nude bosom, descend almost to the small, bare, blue-veined feet. Presently, scarce breathing, lest she should disturb the sleeper, she advances to the open casement, and throwing herself on the heap of roses, gazes dreamily, now at the tranquil moonlight scene without—the languid-leaved trees, which, bending, seem to embrace like lovers—the long, bright river breaking into diamond dances, as it curves round some promontory of woodland or verdure, and floating in its radiant sleep towards the mountains and the dawn—and now turning, gazes with careless curiosity on the splendid-hued viper, which, rolling aside the fruit, and nearing her with stealthy stillness, erects its bright-eyed head, eager to be petted, and rests its shining scales in her hand.

Thus occupied, but a short space had elapsed when Paipha is suddenly aroused by a low noise like that of footsteps entering the door beside her, and a sound of some one breathing deeply, passing her. Startled, she listens acutely—glancing round the chamber, and unable to perceive any figure, or to recognize any cause for the mysterious sounds she had just heard, has already satisfied herself that it was but a fancy or the wind—when, turning her eyes in the direction of the king's couch, her amazement is reawakened at beholding a light, which, glimmering keenly as a prism of steel in the moonbeam, seems hovering round the royal sleeper. Scarcely a moment has elapsed, when, still gazing towards it with wonder and fearful earnestness, she sees it raised for a second—then swiftly descending; then, just as, excited by superstitious fear, she is about to utter a cry, she hears a smothered groan swooning dolorously from the couch, and rushing in terror towards the king, beholds—oh, horror! that stabbed to the heart, and weltering in his blood, he is dying.

Suddenly, her shrieks ringing through the palace, arouse its sleeping inmates, and presently a throng of men and women hurry into the chamber, followed by the queen, who, first throwing herself on the body of the expiring monarch, and uttering exclamations of well-simulated distraction and sorrow, suddenly points to Paipha, whom several have already seized, denouncing her as the assassin. Pale, and shuddering with terror, the concubine, in broken sobs, narrates the mysterious and terrible appearance which she had witnessed; but incredulity is stamped upon every face; and, overwhelmed with a sense that she is regarded as the murderer of her royal paramour, losing consciousness, she sinks into the arms of her furious guards. "Wretch," cries the queen, seizing her by the hair, "what torture can be adequate to thy crime?" then, flinging her from her, with furious gesture—"Away!" she cries, "hurry her to prison—would she could die a thousand deaths—away!"

BATTLE.

HAVING thus gained possession of the throne, Gyges inaugurated his reign by giving the inhabitants of Sardis and the other Lydian cities a series of banquets,

unparalleled in magnificence; and while the people, dazzled by the treasures he scattered among them with lavish hand, occupied with never-ending games and amusements, and intoxicated with ceaseless revel, appeared to lose for the time the feeling of superstitious awe and terror with which they had long regarded him—for the rumor of the mysterious power he possessed had flown to the furthest limits of the land—a terror gloomily augmented by the strange death of Candules, and the sudden ascent of Gyges to the throne—declaring war against the King of Babylon, he assembled his armies, and surrounded by his cavalry, headed by his satraps, marched in martial array eastward towards the great Mesopotamian plain.

After a triumphal progress through the neighboring states, his army were already approaching the frontier of Armenia, then a dependency of the great Babylonian empire, when its king advanced to give the usurper battle. It was a bright, but tempestuous morning when the combat took place—on a level plain, beneath a range of steep mountains, and skirted by the sunny stormy sea. Long hours the combat raged, during which the earth trembled beneath the furious shocks of phalanxed horsemen, contending with sword and spear—of solid squares of footmen, struggling hand to hand—while from the heights the bowmen on either side darkened the air with clouds of arrows. Overhead throughout the day the thunder pealed along the mountain crests, and the convulsed sea, heaving its mighty billows, roared in sympathetic unison with the war. Yet louder than the thunder or ocean rose the noise of battle, the shock of armor, the ringing of weapons, the hissing of missiles, the cries of the captains, and clamor of the hosts encountering. Gyges at early dawn had been seen accoutering in his tent, where his armorers had been bidden to close the rivets of a mighty suit of Chalybean steel which he had carried with him from a foreign land; but after the fight commenced he had disappeared, and was believed to be watching the combat from an eminence. About the time his warriors had lost sight of him, however, an unaccountable panic took place in the region of the plain where the war raged most furiously, where the Armenian monarch, encompassed by his bravest, and mounted on a moving throne,

surveyed the war. From time to time one of his captains fell, pierced with a deadly wound, cries of treachery ever and anon rose from the lines of his body-guard, amid which a thrill of mysterious awe passed at finding the hand of an invisible death among them, when suddenly they heard the king, who sat alone and supreme in his royal chair, utter a piercing shriek, and saw him next moment topple, an ensanguined corpse, on the earth.

When the intelligence of this event sped, rumor-winged, through the battle, the army of Gyges seemed to have acquired a new courage, and advancing with a mighty shout, they began to drive the Armenian hosts before them and into the sea; but at this moment a storm of trumpets sounded in the rear, and glancing in that direction, they beheld the army of Babylon, battalion on battalion, horse and foot, advancing innumerable from the plain, which they covered with their glittering lines, even to the remote horizon. The sun was beginning to descend, like a globe of blood, into the wild sea, as sudden consternation seized them at finding themselves—a fiery, but forlorn column of war—closed in by the outnumbering enemy. In swift and furious never-ending masses the Babylonians advanced, impregnable multitudinous, annihilating resistance; like a forest uprooted and overwhelmed by a tempest, the army of Gyges, now collecting for a moment in despairing companies, now flying from one raging wall of spears to another, fell swift and hopelessly—death swallowed phalanx after phalanx; and as the sun, reddening the shadowing waters, cast its last ray on the blood-deluged battle-plain, a cry of victory echoing from the conquering hosts across the plain, and mingling with that which rung triumphing through the mountain ravines, already dark with night, proclaimed that the power of the Lydians was no more.

It was already midnight, as the moon, rounding toward the south, cast its beam into the mouth of a mountain cavern, some miles from the plain of battle; while the light, peering into its gloomy penetralia, fell on a heap of leaves, amid which something like a brand glittered—a stony stillness pervaded the place.

Suddenly, a figure, like a shadow, appeared at the entrance, looming indistinctly against the low, round moon—one hand was pointed to its heart; on its awful brow

rested something like the phantom of a diadem; and a voice, low and awful as the wind that breathes from hades, murmured, "Arise, Gyges, and listen to thy doom!"

As these accents swooned away, the leaves rustled with a sound as though some one had moved them, turning in dreamful slumber. Then, though no figure appeared, a Voice, imperious-toned, exclaimed, "Candules! why troublest thou my rest? What infernal god has sent thee, phantom, to mock at my overthrow—to reproach me with thy death?" Then, as though its invisible figure advancing confronted the specter, the same voice cried in louder accents, "Away, shadow! mortal though I be, I fear thee not; while I live on earth the destinies have gifted me with superhuman power; and should death, which I doubt, be my lot, the spirit to which, when here, thou hast succumbed shall fear nor thee nor any phantom presence in hades!"

There was a pause, during which the dead silence of the cavern was broken by a faint, sullen sound, as of that of drops of blood falling on the stone.

Then the voice of the immovable shadow resumed, in tones so deep and awful that the dark air trembled—

"Thy power, audacious mortal, shall depart from thee. Where love has reigned, hatred shall hold dominion. Already thy armies are overthrown—already thy people are in revolt; hopeless, and grown weaker than a child, despair shall swiftly claim thee, and hurry thee, amid the flames of Sardis, to thy doom!"

After an interval, the voice of Gyges murmured: "It is gone; this phantom of Candules—yet am I awake? And may not what seemed a moment since have been but a dream—a vision shaped by this disaster-stricken mind? Yes, it must be so. The land is silent; the night is clear; already dawn streaks the east. I will again to sleep, for with the day I must journey to Lydia. Avaunt, phantasms of the darkness! Why should I fear the voice of a dream, prophesying horror—of a dream—the wandering thought of a battle-shook brain? No more! Courage, Gyges! thou shalt live and reign."

DESTINY.

THE rumor of the overthrow and extinction of the army of Gyges had passed rapid as the wind across the countries be

tween Armenia and Lydia; and, as on his way thither, entering unseen the palaces of the different powers, he found that his defeat had not only broken the alliances which they heretofore maintained with his kingdom, but that, influenced by Babylonian emissaries, they were already assuming an attitude of menace toward his throne. He hastened, fast as the fleetest steeds could bear him, to Sardis.

It was noon when he approached the city; and, quitting his horse in an adjacent wood, entered the gates invisibly, and hurried to the palace. Then it was, as he passed from street to street, that, for the first time, his daring soul, hitherto inaccessible to fear, became a prey to gloomy apprehensions; and that, recalling the doomed announcement of Candule's murdered ghost, his haughty reliance in his power and destiny began to waver, for it was evident that the entire population had grown disaffected to his authority: clamor filled the streets; the faces of each group that he passed were dashed with discontent and darkened by hatred; and on all sides angered voices were heard raging against the usurper and tyrant, and demanding—some his banishment, many his death.

As he approached the queen's apartments, a Persian satrap, whose fierce face was illuminated with an expression of triumph, passed him, and was presently heard giving orders to a body of soldiers drawn up in a court-yard beneath, to guard the gates of the city, and seize Gyges, should he attempt to enter. It was clear that treason was already busy in the heart of the palace. Forthwith rendering himself visible, Gyges advanced into the chamber of the queen, who no sooner beheld him, than in a burst of well-simulated sorrow, she flung herself into his arms, and alternately rejoiced at his arrival and bedewed the ground with tears, while she lamented the disaster which had befallen his army, and the spirit of revolt which the people had exhibited in his absence. Penetrating her thoughts, and finding treachery at work, Gyges, while affecting to soothe her, presently inquired by what right an emissary of Persia assumed authority in his palace. Nyssea replied that her father, the king, had sent his minister to the court with offers of warlike assistance, should such be needed. Undeceived, however, Gyges calling a council, summoned the satrap to

attend, and despite the assurances of the Persian, was at no loss, from what he had already heard, to perceive that the father of the queen was conspiring his dethronement. Preserving his usual gracious demeanor, however, Gyges adopted rapid measures for overcoming the crisis in which he found himself. Collecting his still numerous adherents, he issued secret orders to his ministers and army; all foreign emissaries were forthwith seized and imprisoned, and while his troops, animated by his presence, occupied the city and repressed the revolt, the people to whom he had ever been an object of terror, stunned at his mysterious return, quickly assumed their usual pacific attitude. In short, in a few hours after his arrival, Gyges had restored tranquillity in the city, and paralyzed the intrigues of his enemies, and already resuming his confidence and daring, forgot the defeat of his army, laughed to scorn the efforts of hostility, and began once more to expand his soul with dreams of power and conquest.

That night a great banquet was given by the king to his ministers and confidants. For hours the revel lasted; the wines flowed, and music and song resounded through the gilded domes of the festal chambers. The midnight star already shone through the casement, near which stood the purple couch of the king and queen, when Nyssea, scattering a cup of wine with rose-leaves, and touching it with her lips, presented it to Gyges, whose watchful eyes, penetrating every heart, had contrasted with the gayety of his speech, and who that night had hardly tasted of the cup in which his company so lavishly indulged. The king drained it laughingly, and the revel for a while proceeded, when a slow sensation of weariness stealing over him—a result, as he supposed, of his having passed several nights with but little rest, and his exertions throughout the past day—he finally gave the signal for his guests to retire, and presently sank into a deep sleep.

For a space all was silence in the chamber in which the lights were becoming gradually extinguished, when the queen, who, motionless and awake, had reclined beside Gyges, arose, and gently removing the mysterious ring from his finger, hurried softly out of the chamber, and disappeared in the already hushed palace.

When, at early dawn, Gyges awoke,

and instinctively searching, as was his wont, for his magic ring, found that it was gone, struck with despair, he hurried to the chamber of the queen. Nysean, however, was nowhere to be seen.

Summoning his attendants, he inquired whether the queen had been seen leaving the palace. They answered they had not beheld her since the previous night, and that the doors were still locked as then. Upon this he immediately ordered the keys to be brought him.

"Specter of Candules, thou hast spoken true," he cried, as alone, his mind filled with tempestuous emotions, he paced hither and thither throughout the chamber. The entire consequence of his loss rushing upon his soul filled him with despair; he reflected that he was wholly in the power of the queen, who, having the means of becoming invisible, could at any moment destroy him and escape his vengeance. While thus deprived of his charm, he found himself wholly abandoned to the mercy of his numerous enemies. Dismissing his attendants, who seemed to have become instinctively conscious that his reign was drawing to a close, and whose countenances indicated indifference and hatred, Gyges remained for many hours throughout the day, occupied but unseen, in the central chamber of the palace; and evening had already fallen, when a breathless scout, hurrying from his horse, knocked at the portal of the suite of apartments within which the king was secreted. Presently unlocking the door,

"What is thy message?" he cried. "What intelligence bringest thou so hastily?"

"The army of the Babylonians, sire, has entered Lydia, and even now is approaching Sardis."

"At what distance, slave, may they now be from the city?"

"Some ten leagues," replied the envoy. Then the king dismissing him, closed the palace doors.

Night was already advanced, and a great wind which had risen at sunset, and which rapidly increased in violence, made the walls of the strongest structures tremble to the

foundations, when a sudden cry of "The palace is on fire!" burst from the citizens, who, in consternating groups, had suddenly rushed into the streets. So sudden and fierce, indeed, had the flames already become, fed and fanned by this mighty tempest, that none among any of the townsfolk could be found sufficiently intrepid or desperate to approach the blazing pile, through whose casements, doors, and roofs the flames burst and sprang, and around whose towers and pinnacles they already careered in fierce wreaths, until the great structure glowed from base to summit, one vast volume of raging fire.

At first a few faces appeared despairing on the walls and battlements in the tyrannous light of ruin, and a few despairing shrieks thrilled through the reddened dome of the night heaven; but they quickly disappeared, and then nothing was heard but the crackling of the fire, the falling of great columns, walls, and roofs, and the ever increasing roar of the conflagration.

Hours passed; the inner walls of the palace, already glowed like red-hot iron, when as the affrighted population gazed upward through the sky, then bright as day, at the great central tower, which had hitherto resisted the ruining fury of the consuming element—lo! a Figure appeared, mounted on its summit—his face like a flame, pale with eastern frankincense—solitary, and calmly surveying the magnificent scene of ruin and desolation.

In an instant a thousand voices cried, "It is Gyges!" Then hardly had the echoes died away through the air when the mighty structure shook, toppled, sunk, with a sound like loudest thunder, scattering fiery fragments of danger on all sides; and as the wild raging flames which succeeded mounted to heaven—aloft, upon a burning cloud, a shadowy phantom, with fixed and calm smile, appeared, surveying the final scene of destruction.

"It is the specter of Candules!" cried the people, and the multitude fell prostrate to the earth.

From the London Quarterly.

MEXICO AND ITS ASPECTS.*

THERE was an ingenious theory advanced by Hugh Miller, that the early geological history of a country was very often typical of its subsequent civil history. If its strata bore testimony of many and violent disturbances; "if the trap-rock"—to use his own language—"had broken out from below, and tilted up its strata in a thousand abrupt angles, steep precipices, and yawning chasms, I found the chances as ten to one that there succeeded, when men came upon the scene, a history scarce less disturbed, of fierce wars, protracted sieges, and desperate battles. The stormy morning during which merely the angry elements had contended, I found succeeded, in almost every instance, by a stormy day maddened by the turmoil of human passion." Perhaps hardly any portion of this globe would afford a more striking illustration of this idea than that rich but unhappy region of which we are about to write. The strange conformation of the Mexican table land, the sudden extrusion of volcanic rocks bursting out unexpectedly to the surface, the deeply rent barrancas, as the fissures are termed, which suddenly tear its rocks asunder and present a most serious obstacle to the formation of roads, the eccentric course of its rich veins of silver spreading out in a moment to a lode of surpassing wealth and then as suddenly disappearing, and the quaint forms which some of its mountains assume, such as the Coffre di Perote, and other basaltic elevations, all combine to form a geological history, which only finds a parallel in the civil condition of the country for many past generations. In the sudden and simultaneous upheaval of

so vast a district as was affected by the rise of the cone of Jorullo,* we may discern a type at least of the fiery passions which have from time to time burst out in Mexico, and changed the complexion of its politics; whilst the gradual cessation of volcanic agency has found its counterpart in the subsequent subsidence of exhausted energies, that have left behind them only the dreary waste on which their destructive powers have been expended.

We are disposed to think that the public attention has hardly been so much directed to the present political condition of Mexico as the subject deserves. We are not, indeed, surprised at this; for the surpassing interest of the struggle which has followed the disruption of the United States, and the vast importance to our own countrymen of the issues involved in that stupendous conflict, have tended to concentrate the public thought upon that special portion of the American continent. It is true that a large amount of English capital has been invested in Mexican securities, (the word is a palpable misnomer,) as well as in the various companies formed about forty years ago to work its veins of silver; but, despite the accusation of being a nation of shop-keepers, it has always been found impossible to awaken England to any very lively concern in foreign affairs which only affect the pockets of its citizens. Nor are we about to enter upon a detailed account of the circumstances under which England and Spain withdrew from any further participation in the French invasion, nor of the successive steps by which the army of Napoleon has marched to the capital. We rather propose to present our readers with such a sketch of the country and its inhabitants as may enable them to form some judgment of its past condition and future prospects.

* *Life in Mexico.* By Madame CALDERON DE LA BARCA. Edited by W. H. Prescott. London. 1845.
Vagabond Life in Mexico. By GABRIEL FERRY. London. 1856.

Adventures in Mexico and the Rocky Mountains. By GEORGE F. RUXTON. New-York. 1848.

History of the Conquest of Mexico. By W. H. Prescott. Fifth Edition. Three Vols. 1850.

Mexico: the Country, History, and People. Religious Tract Society. 1863.

* By violent volcanic action, in June, 1759, this cone of Jorullo was upheaved and formed sixteen hundred feet high above the plain of the Malpais in a few hours.—EDITOR ECLECTIC.

In a historic sense, Mexico is the oldest country of the New World. It is not merely that part of the American continent upon which the Spanish discoverers first formed a permanent settlement; but it possessed at the period of their arrival a fully organized empire, whose early records are more complete, and extend to a more remote antiquity, than those possessed by any other of the aboriginal peoples. The opinions of learned historians are, indeed, divided as to the value and accuracy of these early legends of Aztec civilization; and of late years some rude assaults have been made upon the account so picturesquely detailed in Mr. Prescott's volumes of the luxury of Montezuma, and the manners of the nations beneath his sway. With all such objections we can only deal, as Dr. Arnold did with the destructive theories of Niebuhr and Beaufort: we may allow to some extent the force of their reasoning; but we can not endure to be robbed of such a pleasing narrative. Nothing but the uncouth names of the actors could prevent the stories of Xolotl and Nezahualcoyotl from being as popular as the tale of Romulus or of Solon.

The physical geography of Mexico is almost unique. The country is one vast table land, raised some seven thousand feet above the level of the sea, extending across the entire continent from the Pacific to the Atlantic Ocean, and stretching away in a northerly direction for many hundreds of miles. Along the coast there lies a narrow fringe of low land, which sinks into a mere strip on the western shore. A large portion of the country lies beneath the torrid zone; but its great elevation causes it to enjoy all the blessings of a temperate climate. The fruits of every quarter of the globe abound in unexampled profusion, the atmosphere is of unsullied purity, and through its transparent medium the eye wanders over slopes of marvelous beauty until the view melts away in the boundless distance. The great plain in which the capital stands presents an almost unbroken decline for three hundred leagues together, varied only by a few giant volcanos that do but serve to throw its rich and expansive beauty into stronger relief. In its present condition this vast plateau extorts the admiration of every visitor; but when clothed with the foliage of its primeval forests, with its fair lakes sparkling beneath the sun, and brilliant with

the light flower-laden canoes of the Aztecs, it must have presented a vision of surpassing loveliness, and may well have recalled to the minds of the first Spanish invaders the fairest spots in their own sunny land.

The geological conformation of the country precludes Mexico from possessing many seaports; and Vera Cruz has hitherto monopolized almost the whole of its foreign trade. The city owes its origin to Hernando Cortez, and we must refer our readers to Mr. Prescott's pages for an account of the very characteristic circumstances under which its foundations were laid. The modern aspect of the place hardly corresponds with its past fame or its present importance. Its harbor is shallow and exposed to dangerous winds, which for six months almost cut off communication with the shore. During this season, the air is filled with sand, the sky is dark with clouds, the coast line is one unbroken sheet of foam, and the pedestrian can scarcely keep his feet, so great is the violence of the gusty winds. So pleasant a state of things alternates with an unhealthy season, in which the yellow fever rages and decimates those who are unacclimatized. "What is that fog that overhangs the city?" asks the newly-arrived stranger. "Sir, it is the fever," is the grave reply. Although lying beneath a burning sun, no measures are adopted to cleanse the streets of Vera Cruz, and filthy black vultures may be seen on all sides feeding upon the putrid carrion. It is hard to say whether it must be worse to be the victim of the gales from November to April, or of the yellow-fever from April to November. No wonder that none save a few merchants and some wretched natives are found to linger at the city of the dead.

As the level of the country rises between Vera Cruz and Mexico, the traveler enters upon the gorgeous and luxuriant vegetation of the tropics. The woods are alive with birds of gaudy plumage and noisy chatter, with cardinals, cat-birds, and macaws. Parrots swing lazily on pensile branches, and humming-birds hang, poised with murmuring wing, at the mouth of some favorite orchid blossom. Long parasites, such as the vanilla, hang in rich festoons, and laden with flower fall in garlands from lofty trees, or drop down into the water, as if to drink and carry life to the trunks that bear them. The cactus hedge, with its scarlet blossoms, blazes like a living wall of fire. The pools are black

with water fowl; the air alive with insects, and at night radiant with fire-flies. But the picture has its reverse side. Amidst this sea of blazing foliage lurks the deadly fever, whilst mosquitos sally forth at even, and assault every inch of unprotected skin.

The elevation of Jalapa, some four thousand three hundred feet, once reached, we are in the region of a salubrious climate, and a temperature of eternal spring. The yellow-fever is unknown here, the extremes of heat and cold are never experienced, and, despite the misty atmosphere of the winter months, "sickness is comparatively rare and seldom fatal." The fruits of almost every region are produced in unparalleled profusion. Tobacco, coffee, sugar, corn, cotton, barley, wheat, jalap, sarsaparilla, vanilla, pine apples, oranges, citrons, lemons, pomegranates, peaches, apricots, guavas, and many others of less European notoriety, such as papayas, chirimoyas, and tunas, may all be raised at Jalapa. Mahogany, cedar, ebony, oak, dragon blood, palms, and dye woods are but representatives of its forest trees, many of which spring spontaneously from the soil. The unwary reader, however, must not suppose that all these products are cultivated. They might all be grown with much profit; but the Mexican has not energy enough to raise a crop for the foreign market. If you inquire why, the answer will be, "Who knows? Who wants more than corn and chile?"

Almost all the historic interest of Mexico is centered round the capital. Around the shores of the five lakes which adorned the plain of Mexico were gathered the earliest of the peoples who stamped their character upon succeeding ages. The Aztecs, who enjoyed the chief authority at the period of the Spanish conquest, had been preceded by an earlier race, the Chichimecs, under the rule of the wise Xolotl. We can only dwell upon the story of one of his successors, in which the historical student will trace some remarkable analogies to the popular tales of the Eastern hemisphere.

Under the care of Xolotl's successors, so runs the legend, their capital city Tezcuco became the Athens of Anahuac; when suddenly a terrible reverse fell upon their nation in a contest with the Tepanecs. The city was taken, their king slain, and Nezahualcoyotl (the Hungry Fox) escaped by climbing a lofty tree. The young prince, however, soon after fell into

the hands of his foes; but an old servant enabled him to escape from the dungeon in which he was confined. A brief interval of peace was followed by renewed hostilities, and no effort was spared that might insure his capture or his death.

Driven from the palace of his fathers, with a price set upon his head, the Hungry Fox led a wandering life of romantic interest. On one occasion he stole away through a subterranean passage while the soldiers sent to seize him were refreshing themselves at his invitation; on another he lay concealed within a drum, around which his foes were dancing, quite unsuspecting that he was so near them; on a third occasion he was so hard pressed that he was fain to get himself covered with the stalks of chian, which a maiden was reaping in the open field, and his pursuers were then sent off in a false direction. A large grant of land and a bride of noble birth were to be the guerdon of his capture; but no amount of bribe could tempt the poorest Tezcuacan to betray his prince. At length the oppression of the Tepanecs became intolerable, and the Hungry Fox was restored to his ancestral throne.

To this morning of hairbreadth escapes and perilous adventure there succeeded a noon-day of more than oriental prosperity and magnificence.

"The royal palace rose in the midst of the capital, extending for nearly three quarters of a mile in length, by more than half a mile in depth. It comprised two vast courts. The outer one served as the market-place of the city, whilst the inner one contained halls for the reception and entertainment of foreign embassies, and for the retreat of men of science and learning. Here, too, were gathered the literature and archives of the past; and authors assembled to pursue their studies, or to recite their compositions. Hard by were the royal apartments, and the saloons of the king's numerous concubines; their walls bright with alabaster, or gorgeous with hangings of feather work. These rooms opened into gardens laid out with much intricacy and beauty, dotted with fountains and baths of clear water, and enlivened by the plumage of tropical birds; whilst animals and birds that could not be brought there alive were skillfully modeled in gold and silver. Upwards of four hundred millions of pounds of maize, and nearly three hundred millions of pounds of cocoa, eight thousand turkeys, thirteen hundred baskets of salt, with game, vegetables, and condiments innumerable, were yearly supplied for the royal table. Nor is it at all incredible that the pile contained

three hundred apartments, some of them fifty yards square, when we read the accounts of the vast ruins that still attest the magnificence of the palace, or when we recall to mind that its remains have furnished the materials for all the churches and other buildings since erected at Tezcuco by the Spaniards."—*Mexico: the Country, History, and People*, p. 35.

Amidst such splendor the Hungry Fox experienced all the weariness of satiety. At times he would seek for fresh adventure after the fashion of Haroun Alraschid, by wandering in disguise among his subjects, and thus becoming acquainted with their actual condition. Occasionally he would betake himself to poetry and the charms of literary composition; and his verses breathe the spirit of one who has drunk the cup of pleasure to the dregs, and yet has been unable to allay his thirst. But in an evil hour for his own good name, he indulged a guilty passion for the beautiful young wife of an aged noble; and after sacrificing the husband by the same stratagem that was employed against Uriah, he took the widow to himself. It was not until after long fasting and many prayers that the union thus cemented by crime was fruitful, and in the evil fortunes which befel his son we may trace the vengeance which rarely fails, sooner or later, to overtake iniquity.

This single illustration must serve to indicate the spirit of early Mexican legend. It will at once be seen how widely it differs from the fables which were current amongst the more northern tribes, and how great an advance in cultivation of mind and thought must have been reached by a people amongst whom such stories were current. By the time that the Spaniards reached the plateau of Anahuac the Tezcuacan power had passed away, and their king had become a tributary to Montezuma.

With the arrival of Hernando Cortez at Mexico begins another act of the great drama of which this spot has been the scene. The strange impression that was produced upon the native mind by the entrance of the pale-faced warriors, whose appearance was hardly more astounding than the evolutions of their horses and the practice of their artillery; the unrivaled audacity and cunning of the conqueror in venturing thus to march into the heart of the enemy's stronghold, and to make himself master of Montezuma's person; the stormy scenes that followed, as the pas-

sions of the people were aroused by the ill-guided fanaticism of the Christians; and the terrible struggles with all their exciting incidents of personal prowess and sad deadly conflict that marked the retreat of the Sorrowful Night—all these invest the capital of the Aztecs with abundant interest. Yet all these must yield in pathos to the story of the final catastrophe by which the fate of the city was determined.

It were no easy task to describe the condition of the Aztec capital in its palmy days. Doubtless there was much that would seem rude to our own more polished taste; but this was veiled under a barbaric splendor which modern times can hardly parallel. The city lay embosomed amidst the waters of the lake of Tezcuco, its streets not unfrequently intersected by canals and embellished with the brilliant colors of the flowers that bloomed on its floating gardens. Three causeways communicating with the shore each afforded a narrow path available to keep out invaders, or capable of being closed by a blockading army; whilst across the salt waters of the lake many flourishing cities lined the shores, from which canoes were ever darting forth to bring provisions to the capital. Three hundred thousand Aztecs were gathered within the walls of Mexico, who crowded its busy markets, or assembled at the spectacle of the solemn sacrifices. Such was the city which Hernando Cortez undertook to capture or destroy.

For some time the contest raged with varying fortunes. As long as the Mexicans retained their water communication uninterrupted, they were abundantly supplied with necessaries from the neighboring towns, and suffered but little inconvenience from the Spanish occupation of the causeways. At length, however, Cortez launched his fleet of brigantines, and the blockade was complete. It was evident that the besieged must either cut their way out of the city, or else suffer all the horrors of famine; but a determined spirit of resistance was aroused. The proud Aztecs would rather die than yield.

"The fiery cavaliers, however, were too impatient to await the effects of famine, and constant assaults were made upon the city on all sides. As the Spaniards advanced along the causeways, they were supported on either flank by the brigantines, whose fire swept across the path of the enemy. Still the Aztecs retreated

in good order, and fiercely disputed the passage of every breach in the path. When the Spaniards reached the city, a fierce conflict arose at each one of the numerous canals by which many of the streets were intersected. Much delay, too, was caused by the Europeans being obliged to fill up each breach over which they passed in order to secure the line of their retreat. Several days were spent in such conflicts; but every night the Mexicans pulled away the materials with which the breaches were filled up, so that the work had to be begun all over again."—*Mexico: the Country, etc.*, pp. 101, 102.

Such a mode of warfare might well dispirit the invaders. Some complained loudly against the folly of attempting so vast an enterprise with such scanty numbers. Others grumbled at the hardships of a struggle which brought much pain and little plunder; for from the cities they had already captured the gold had been removed or was buried. Ominous sounds, too, constantly fell upon their ears as the besieged taunted them with their avarice, and vowed that if defeated they would hide their treasure where the Spaniards should never find it. The invaders also suffered greatly from the inclemency of the weather, and from the scanty supplies which they could alone command. Under the pressure of these accumulated troubles a general assault was ordered, which had nearly proved fatal to the whole expedition. Cortez himself narrowly escaped destruction. Besides the killed and wounded, there were sixty-two Spaniards taken prisoners.

"A scene followed which filled the Spaniards with dismay. They were encamped so near the city that in the clear atmosphere of the table land they could distinguish what was going forward in the lofty temples. Day by day after this disaster they beheld a solemn procession winding round the lofty pyramidal temple of the god of war. In the midst of the long file marched some of the white-faced strangers ready decked out for the sacrifice. They were urged along by blows until they mounted to the summit, where the victims, one by one, were seized, stripped, and laid upon the sacrificial stone. Then, in sight of their countrymen, the priest struck the prisoner with the sharp stone razor, thrust his hand into the wound, and plucked out the palpitating heart, which he placed upon a golden altar. The body was then hurled down from the pyramid and seized upon, to be devoured by the crowd. These scenes were repeated daily until all the captives had been slaughtered; and at each sacrifice the Aztecs

shouted in defiance, that so should all the enemies of their country be consumed."—*Ibid.*, pp. 103, 104.

Not only were the Spaniards much moved by these horrors, but the confidence of their native allies was sorely shaken. The spirit of the Aztecs, long accustomed to empire, rose with the danger, and no thought of escaping by a desperate sally and abandoning their capital seems to have occurred to them. The besiegers now drew nearer by regular approaches, ruthlessly leveling each quarter of which they got the mastery, and hemming in the wretched people into a more contracted space. Food began to fail the Aztecs. Their supply of fresh water was cut off, and they had to drink the brackish water of the lake. Pestilence soon followed on the heels of famine, and mowed down such numbers that the survivors could not suffice to bury them. Dead corpses lay festering in the streets and houses to aggravate the misery of the sick, the wounded, and the dying. Yet in this terrible extremity they remained unsubdued in spirit, and rejected all entreaties to surrender. Gaunt and haggard creatures staggered through the streets, and rained showers of missiles that fell powerless from their enfeebled arms. At length, after a siege of more than three months, Mexico was taken. So deadly had been the struggle, that more than forty thousand had perished on a single day. The Spaniards had only obtained possession of a mass of ruins. The treasure had all been hurled into the lake. The palaces, the gardens, the menageries—all the pride of Aztec civilization was lost for ever.

The fires that lay smouldering beneath its volcanic rocks could hardly have burst forth with more destructive fury than that which marked the Spanish conquest of the country. This tremendous civil earthquake was succeeded by a period of calm; but there were significant rumbling sounds heard from time to time which were indicative that the flames, though suppressed, were not subdued. The history of the country under Spanish viceroy has been almost a sealed book to English readers; but Mr. Mayer, in his *Mexico, Spanish, Aztec, and Republican*, has made the story known to his American countrymen, and a rapid sketch of the most salient points will be found in the

comprehensive and excellent volume published by the Religious Tract Society. The policy of Spain towards its huge colony in North America may be broadly stated as a constant effort to get as much as possible for themselves out of the Mexicans, and to hinder any other Europeans from sharing the spoil. It is true that many philanthropic regulations were laid down by the home government, which seems to have been actuated by a sincere desire to protect the native races of Mexico, and to put some curb on the extortion and cruelty of the colonists; but the mother country was too distant and communication too difficult to enable it to exercise any great influence in ameliorating the condition of the Indians. There are dark secrets of lives worn out with labor in the mines, of fortunes drawn from the very life-blood of the subject peoples, and of deeds of satanic cruelty, which will never be disclosed, until the day when all things hidden are revealed. A legacy of hatred to their European masters was thus stored up which has not yet been exhausted, and those habits of cowardice, faithlessness, and cunning were acquired, from whose effects Mexico is suffering at the present day.

The history of Spanish legislation for the treatment of the conquered races has been ably handled by Mr. Helps. From first to last the Dominican priests who accompanied the conquerors showed themselves the firm friends of the hapless Indians; but the avarice of the colonists proved superior to the efforts of the clergy. In 1544, the viceroy Sandoval arrived in Mexico with a royal ordinance, which enacted that no slaves should be made in the future wars; that the system of assigning bodies of slaves to each colonist should be abandoned; and that the Indians should not as a class be solely devoted to ignoble pursuits. Had the emperor adhered to this decision, the whole future history of Mexico would have assumed another complexion. But no engine was left untried to obtain the revocation of this decree, and in an evil hour a division of the royal domains was ordered, and the Indians upon them were transferred with the soil. Some thirty years after we find another viceroy, Alsanza, obliged to interfere, that he might secure for the wretched Indians "regular hours of repose, and some time to breathe the fresh air on the surface of the earth." Be-

fore this decree that toil had been incessant. Their taskmasters gave them no respite, and wrought "as if they designed to scrape every vein and artery of the colony's soil." Such cruelty had borne its wonted fruits in a terrible pestilence, under which the weakened frames of the Indians perished to the number of nearly two millions.

The following story will show to what extent intrigue and injustice frequently prevailed in the colonial government. The Marquis del Valle, the son of Hernando Cortez, had the misfortune to incur the displeasure of the Audiencia or Supreme Council which ruled Mexico in the absence of a viceroy. At the baptism of the twin daughters of the marquis a grand entertainment was given by two brothers named Alvarado, who were intimate friends of Don Martin Cortez; and among other things, a masque was performed representing the first meeting of Cortez and Montezuma, the part of the Mexican emperor being played by one of the Alvarados, who, as he placed a diadem of laurel on the head of Martin Cortez, exclaimed: "How well this crown befits your noble brow!" On so slight a foundation an accusation of treason was laid against Cortez and the Alvarados. They were thrown into prison, their papers seized, and, although no trace of any conspiracy was found, the Alvarados were executed, and the Marquis del Valle was only saved from sharing their fate by the timely arrival of Peralta, the new viceroy. Peralta soon discovered the iniquity of the whole proceeding, and penned a dispatch to Spain denouncing its authors. This dispatch the Audiencia not only managed to intercept, but actually sent in its place a charge against Peralta of providing an army of thirty thousand men to aid the marquis in his revolt. This fictitious instrument they confirmed by a batch of depositions. The home government, sorely puzzled, wrote to demand an explanation from Peralta; but this, too, the Audiencia intercepted, and as Peralta's silence was naturally construed into an admission of his guilt, another viceroy was sent out to supersede him. At length, after a delay of seven years, the whole truth came out; but during all this time the Marquis del Valle had been deprived of his property, which was sadly squandered by the crown officials.

Such a narrative will predispose the

reader to believe other imputations upon the probity and wisdom of the Mexican authorities. Occasionally, as might have been anticipated, it was the viceroy himself who abused his power; at other times the council and the municipality paraded their incapacity and cruelty. The Audiencia more especially seldom failed when in supreme power to distinguish itself by some act of atrocity. This body seems to have lived in perpetual fear of a native insurrection; and one night during their tenure of office a great noise was heard, and a report soon spread that the Indians were marching on the capital. Inquiry showed that the alarm had been occasioned by a large drove of hogs; but the Audiencia, to justify their fears, had twenty-nine male and four female Indians put to death. "Their dead bodies were left to hang upon the gallows, tainting the air and shocking the eyes of every passer by, until the neighborhood could no longer bear the stench, and imperiously demanded their removal."

We have a curious illustration of the Spanish government of Mexico in an old English volume which was written at the time of the Commonwealth. Its author, Father Gage, was a Dominican friar, who in company with some of the brethren of his order visited Mexico in 1625. Before the vessel sailed from the Spanish port, an order arrived from Madrid forbidding Gage to join in the expedition. The court of Spain was too jealous of any foreign influence in Mexico to permit even an English-born friar to enter the country. Gage, however, managed to conceal himself in an empty cask on board the ship, and did not come out from his hiding-place until they had been some days at sea. After visiting Mexico and Guatemala, Gage eventually found his way back to England, where he abjured Popery, adopted the tenets of the Puritans, and became chaplain to Fairfax. His thin folio, now very scarce, contains some curious particulars of the scenes which he witnessed, and abounds in variety of adventures which befel him by flood and field.

When Gage reached Mexico the Marquis Gelves was viceroy; and as he had come out with the intention, so common amongst the Spanish officials, of amassing a fortune as quickly as possible, and returning to spend it in the Peninsula, Gelves hit upon the expedient of buying

up all the corn in the country and selling it again at an advanced price. By the law of Mexico there was a fixed price at which corn was to be sold in years of famine; but the harvest had been good, and no apprehensions of scarcity existed. Suddenly, however, it became known that there were no stores of food except in the viceroy's granaries. A panic immediately followed, and prices rose enormously. The people then demanded that corn should be sold at the price fixed by law; but Gelves replied that it was not a year of famine, and refused to interfere. The archbishop tried to influence the viceroy, and when he still remained inflexible, Gelves himself was excommunicated, and the country placed under an interdict. At length a general insurrection broke out, and Gelves was obliged to yield. Of course both sides appealed to the home government. Gelves was recalled, but was made "master of the horse" at the court of Madrid; whilst the noble-hearted archbishop was degraded to the petty diocese of Tamora in Castile.

We have not space to record the strange alternations of fortune through which the colony passed in succeeding years. The impression produced on the mind by the perusal of its history accords, though in a less violent degree, with the physical, geological convulsions to which we have already more than once referred. There were seasons of sudden prosperity, followed by as rapid a depression. At one moment the discovery of a rich vein of silver, such as the mines of Bolanos and Zacatecas, gave an unhealthy stimulus to enterprise. Thousands flocked to the mines with the wildest expectations of wealth. They hurried with feverish impatience from place to place, as rumors of yet richer findings reached them. Vast works were commenced, and a huge outlay incurred in spots where the ores suddenly failed and reduced the adventurers to beggary. In other instances penniless miners were raised to boundless wealth. Under such rapid oscillations of prosperity and adversity the collapse was generally as complete as the inflation had been unwarrantable. To these causes of disturbance others were not wanting. Small-pox periodically devastated the colony. When the harvest failed, it was invariably discovered that no forethought had been exercised to provide food against such an emergency, although the country would

easily have maintained a hundred times its population. There were terrible risings of the natives, with massacres on both sides, in which neither age nor sex was spared. There were seasons of pestilence in which thousands perished without attendance, medicine, or care.

It was no easy task to rule over a country which was so subject to disorganization, and the character of the people under the charge of the viceroy did but aggravate the difficulty of the task. The Spaniards, proud, avaricious, turbulent, paid but little heed to the orders of their chief, when those orders interfered with their rapid acquisition of a fortune; and at a short distance from the capital each colonist was practically independent of the governor. The fertility of the country and the heat of the climate indisposed the natives to exertion, and rendered them improvident; while, under the oppression to which they were subjected, the gentle but quick-tempered Indians became sullen, indolent, and revengeful. The exactions to which they were subjected by law were sufficiently onerous. They had to supply travelers with food and with porters to carry baggage, for which service they were not paid immediately, but the amount due was entered in the town's book, to be settled once a year; and of this tardy payment they were frequently defrauded. The burdens they carried were so heavy that when the strap by which it was slung across the forehead was removed, the skin not uncommonly came away with it. Each district was obliged to furnish a certain number of laborers to till the fields of the colonists; and under various pretences their wages were withheld, and at harvest-time they were glad even to bribe their taskmasters for permission to return home and gather in their own scanty crops. It was through years of such treatment that the hatred of the Mexicans for the very name of Spaniard was fostered until it became inveterate.

The policy of the home government, though commonly influenced by better motives, was not much more successful. These were the days of protection carried out to its fullest extent, and the fond solicitude of the paternal government nearly stifled its bantling. No ships were permitted to enter the harbors of Mexico, except those which had sailed from the ports of Seville or Cadiz. Not even a Spanish vessel might unload its freight

upon the shores of Mexico, save in the inhospitable anchorage of Vera Cruz. All English goods had to be first carried to Spain, there landed, and then once more shipped for the colony, so that the price was enhanced a hundred-fold by the time the articles reached Mexico. So anxious was Spain to monopolize every available advantage, that the manufacture or cultivation of produce that could be made or procured in the Peninsula was forbidden in the colony. It was illegal to erect factories or to cultivate the olive and the vine. The trade so carefully nursed very naturally shrank to dwarfish proportions. When Seville enjoyed the exclusive commerce with Mexico, the whole amount of shipping employed did not exceed twenty-eight thousand tons, and many of the vessels only made a single voyage yearly. With a system of prohibitive duties three fourths of the imports into Mexico were smuggled, and the custom-house officials were bribed to wink at the violation of a law which ordained death as the penalty for disobedience. It is unnecessary to say more of the enactments by which the inland revenues were arranged, than that they were in keeping with the regulations which crippled the foreign trade of Mexico. One important item of taxation is too characteristic to be passed over. It was that levied upon papal bulls.

"These bulls were issued every two years, sent over to America from Spain, and sold by the priests, under the direction of a commissary appointed to superintend this branch of the revenue. They were of four kinds: First, The bull for the living, or *Bula de Cruzada*, so called because it has some traditionary connection with the bulls of the crusades. It was deemed essential for every person to possess this bull, and its virtues were innumerable. Whoever purchased it might be absolved from all crimes, except heresy, by any priest; and of heresy he could hardly be suspected with this shield to protect him. On fast days he might eat any thing but meat, and on other days he was exempted from many of the rigorous injunctions of the church. Two of these bulls, if they had been paid for, communicated double the benefits of one. Second, *The bull for eating milk and eggs during Lent*. This was intended only for ecclesiastics, and persons not holding the first, which entitled the possessor to all the advantages of both. Third, *The bull of the dead, Bula de Defuntos*, which was indispensable to rescue departed souls from purgatory. It was bought by the relations of a deceased person, as soon as possible after death; and poor people were thrown in-

to agonies of grief and lamentation if they were not able to purchase this passport for the spirit of a relative suffering the miseries of purgatory. Fourth, *The bull of composition*, which released persons who had stolen goods from the obligation to restore them to the owner. One slight condition, it is true, was attached to this bull; which was, that the person when stealing had not been moved thereto by any forethought of the virtue of a bull to make the property his own, and his conscience white. Bating this small condition, the bull converted all stolen goods into the true and lawful property of the thief. It had the power, moreover, to correct the moral offenses of false weights and measures, tricks and frauds in trade, and, in short, all those little obliquities of principle and conduct to which swindlers resort to rob honest people of their possessions. 'It assures to the purchaser,' says Depons, 'the absolute property in whatever he may have obtained by modes that ought to have conducted him to the gallows.' The price of these bulls depended on the amount of goods stolen; but it is just to add, that only fifty of them could be taken by the same person in a year."—*Ibid.*, pp. 228-230.

The Spanish power in Mexico naturally came to an end when the Peninsula was overrun by the armies of Napoleon. But the ruling class was not disposed to yield its authority without a struggle. It had borne itself with excessive pride, excluding every Creole from any share in the government or the higher dignities of the church; and Batallar, one of the imperial commissioners, had declared that a Castilian cobbler or a Manchego mule had more right to rule than the best native American. It was clear that a war of castes was imminent, and that it would rage with terrible fury. Once more the volcanic fires were ready to burst forth in an earthquake that should rend all Mexico asunder.

Hidalgo, curate of Dolores, was the first to raise the standard of revolt, around which the Indians gathered in thousands. On they came, inflamed with the passions engendered by years of oppression, and burning for revenge. Every European they met was sacrificed, and every Creole who hesitated to join their ranks shared the same fate. "Their first advance was irresistible until some twenty thousand undisciplined and half armed savages reached Guanajuato, shouting, 'Death to the Capuchinos!'" The town refused to yield, but was carried by storm, and, despite the entreaties of Hidalgo, a general massacre ensued. For three days

the carnage and destruction continued, until through very weariness the rebels held their hands. These excesses provoked a sanguinary reprisal as soon as the imperial forces under Calleja could make head against the insurgents. The latter retired from Mexico, suffered a disastrous defeat at Las Cruces, and thence fell back upon Guanajuato, which again became the scene of the most revolting cruelties. "The inhabitants of the town, men, women, and children, were driven into the great square of the town, and deliberately butchered. The great fountain flowed with human blood. Fourteen thousand perished in this way; and Calleja boasted in his dispatches that by cutting all their throats he had saved the expense of powder and shot."

The subsequent history of the revolutionary wars reads almost like the pages of a blood-and-thunder tragedy. Scenes of atrocity and bloodshed, in which the royalists especially distinguished themselves, succeeded one another with terrible rapidity. As the conflict deepened in intensity, it soon became apparent that hatred of the Spaniards was the only animating principle of the insurgents; nor was it to be expected that a people trained up under the Spanish colonial system would prove either worthy or capable of liberty. Among the military chieftains who now assumed the direction of affairs, no man arose of such commanding talent as to insure the submission of his fellows. Personal jealousies split them into sections, around which each one ranged himself, as his interest or the humor of the moment inclined him. Nominally, indeed, there were two great parties: the Federalists, who desired that the republic should be composed of a number of States virtually independent of each other, on the model of the United States; and the Centralists, who were in favor of a single vast State, to be ruled from the capital; but the partisans of either side broke through every tie by which men can be bound together for common action. The wearisome narrative of endless intrigue and treachery recalls forcibly the terms in which Livy paints the character of Hannibal: "*Perfidia plusquam Punica, nullum jusjurandum, nulla religio, nulla fides.*" Torres betrayed Mina. Iturbide first turned against the viceroy Apodaca the very forces with which he had been intrusted against the Republicans; then

outwitted Guerrero, Bravo, and Victoria, the Republican leaders, and caused himself to be proclaimed emperor; and was finally himself betrayed by Santa Anna, whom he regarded as the most faithful of his supporters. This list of traitors might be greatly extended, if it were worth while to enter upon such details of petty chicanery and deceit.

Amid such a mass of faithlessness one incident of fidelity stands out in pleasing contrast. Guadalupe Victoria was one of the bravest of the Republican chieftains. He had first gained notoriety at the taking of Oaxaca, by swimming across the moat which surrounded the place, and, in the face of the enemy, cutting the ropes that held back the drawbridge, over which the Republican forces then marched into the town. Every inducement was held out to Victoria, to seduce him from the popular side. Rank and rewards were offered in return for his compliance; but in vain. A large force was then sent by the viceroy against him.

"His band was dispersed, and a price set upon his head; but none were base enough to betray him. For thirty months he wandered amongst the recesses of the mountains, enduring incredible hardships. His food was the roots of trees, or the wild fruits of the forest, or even the bones of dead animals, which he found in caverns. His dress was torn away, till nothing but a tattered cotton wrapper was left him. In this condition he was found by two Indians, after the revolution of 1821, and he was welcomed as one risen from the dead; for the viceroy had been assured that he had perished, and that his body had been recognized. This account had been published by authority in the official gazette. The story of his discovery is no less remarkable. When abandoned by his forces in 1818, he was asked by two trusty Indians where they should look for him if better days should ever come, and in reply he pointed out a certain mountain on which they, perhaps, might one day find his bones. The Indians treasured up this hint, and when Iturbide declared himself, in 1821, they set out in quest of him. For six whole weeks they sought him, maintaining themselves principally by the chase; but at length their bread was exhausted, and they were about to return, when one of them, in crossing a ravine, which Victoria frequented, discovered the footprints of one who evidently had been accustomed to wear shoes, (this always gives a difference of shape to the foot,) and was therefore of European descent. Two days the Indian waited on the spot, and then, as provisions were failing him, he hung upon a tree all the little maize cakes he had in his wallet, and set out for his native village for more. He hoped that Victoria would

see the tortillas, and would understand that some friend was in search of him. This plan succeeded. Victoria, on crossing the ravine two days afterwards, perceived the maize cakes, which the birds had fortunately not devoured. He had then been four whole days without eating, and upwards of two years without tasting bread; and he said himself, that he devoured the tortillas before the cravings of his appetite would allow him to reflect upon the singularity of finding them on the solitary spot, where he had never before seen any trace of a human being. He was at a loss to determine whether they had been left there by friend or foe; but, feeling sure that whoever left them intended to return, he concealed himself near the place. Within a short time the Indian returned: Victoria instantly recognized him, and abruptly started from his concealment, in order to welcome his faithful follower. But the man, terrified at seeing a phantom covered with hair, emaciated, and clothed only with an old cotton wrapper, advancing upon him, sword in hand, took to flight, and it was only on hearing himself repeatedly called by name that he recovered his composure sufficiently to recognize his old general."—*Robinson's Mexico and her Military Chieftains.*

We are unable to follow the fortunes of Morelos, or Mina, or Iturbide, each of whom in turn, after a brief career of prosperity, paid the penalty of their reverses on the scaffold; but any account of recent political movements in Mexico would be very incomplete without some notice of the career of Santa Anna. This man was the son of a wealthy Creole, who possessed large estates on the road between Vera Cruz and the capital. At a very early age he raised a body of light cavalry, composed of farmers and Indians upon his estates; and after distinguishing himself by his address and courage, he became an important supporter of Iturbide. Santa Anna's wealth, his handsome person, winning manners, and great command of language, all fitted him to be a party leader in Mexico; and as he was never troubled by any scruples of conscience, or by respect for his word, he entered with all the eagerness of a gambler upon the political game that was being played in his native land. He did not long remain faithful to Iturbide; and, upon his removal from power, Santa Anna was not more obedient to the Congress which assumed the direction of affairs. It was in vain that a superior force was sent against him. Santa Anna, thoroughly acquainted with the disposition of his fellow-countrymen, and fertile in resources,

was the *beau idéal* of a guerilla chief; and when to the stratagems by which he had deluded the forces of the Congress he added the merit of outwitting the Spanish general Barradas, and

freeing his country from the last army sent by Spain for its reconquest, his influence became predominant; and in May, 1833, he was elected president.

[TO BE CONCLUDED.]

From the London Quarterly.

THE GOSPEL HISTORY.*

OUR theological readers need no introduction to Dr. Ebrard. As the victorious opponent of Strauss, as the learned, acute, and uncompromising enemy of the "negative criticism," and as a most able and successful defender of the historic truth of the New Testament, his name is familiar to all Christian scholars. The volume mentioned above is a translation of his great book on the Gospels; not such a translation as renders the use of the original superfluous, for it does not give the whole of it; yet one which leaves no very material part of Dr. Ebrard's work unrepresented, and which we hail as a precious addition to the forces with which English Christianity is now doing battle to the spirit of skepticism and unbelief. The chief value of this, as of other polemical writings of Dr. Ebrard, is the positive and constructive character of his criticism. He can distinguish and define to himself and his readers the most subtle creations of the rationalist fancy. He knows how to meet the shadows on their own ground, and to fight them with their own weapons. But he is much too wise a man to content himself with merely routing a host of dreams and dogmas. What he aims at is to furnish the student of the Gospels with a positive statement of the case as it actually stands, such as shall contain within itself a reply to all objections. This is the right principle; and Dr. Ebrard has nobly and triumphantly carried it out in his book. The "introduction" is devoted chiefly to

the history of modern criticism and apologetics in relation to the Gospels. It is needless to say that on this subject the author writes with characteristic fullness and accuracy of knowledge; and those who are acquainted with Dr. Ebrard's manner will not be surprised to see him lay ungloved hands on many of the speculations which fall within range of his inquiry. German rationalism has no reason to complain on this score. Like its ignoble English offspring, it takes limitless liberties with the most sacred opinions of others, but is eminently thin-skinned itself; and we have no tears to shed over it, if a controversialist like Dr. Ebrard is not over nice in his manipulations. On the philosophical absurdity of the popular affectation of freedom from religious bias in matters of Scripture criticism, on the utter scientific rottenness of some of the leading rationalistic theories of the Gospel history, and on the value of the constructive method of argumentation for the Christian apologist, Dr. Ebrard writes with a good sense and a trenchant power which must be seen to be appreciated. The main work divides itself into two parts, the former of which is occupied with a searching examination of the contents of the four Gospels considered as to their form and matter respectively; while the latter, which is much shorter in the translation than in the original, presents a series of important critical disquisitions on various points belonging to the Gospel writings and their history. The first part opens with certain preliminary remarks on the principles followed by the evangelists in their accounts of our Lord's life, and discusses particularly the ques-

* *The Gospel History: a Compendium of Critical Investigations in support of the Historical Character of the Four Gospels.* By Dr. J. H. A. EBRARD. Edinburgh: T. & T. Clark. 1863.

tions of the sequence of events in the Gospels, as chronological or otherwise, and of the true doctrine of harmony and synopsis. To this succeeds an elaborate and penetrating investigation of the plan and arrangement of the several Gospel narratives, the data as to the succession of facts related in them, and as to their synoptical relation to one another, receiving the special attention which their importance demands. The conclusion to which Dr. Ebrard comes on the general subject of the "form" of the Gospels is, that while the so-called synoptical evangelists have no intention whatever of following a strictly chronological principle of composition, there is not a single instance in which their records disagree with the proper sequence of events as it appears in the chronological Gospel of St. John, and that, so far as the possibility of obtaining from the Gospels a consecutive and self-consistent history of Christ can certify us of the credibility of their contents, we have most abundant reason to accept them as historically true. The question of the truth of the "matter" of the Gospels is treated in a second division of the first part of the work; and here the reader will find at once a magazine of unanswerable answers to the leading objections of skepticism, a full and satisfactory resolution of many of the puzzles with which modern thought is apt to perplex itself in studying the evangelical history, and a cumulative argument for the genuineness of the Gospels, which we do not hesitate to pronounce as much a demonstration as any conceivable conclusion of the dialectician or geometer. We do not make ourselves responsible for all Dr. Ebrard's expressions, nor are we pledged to every sentiment which he advances; but we call attention to this portion of his work as effectually disposing of most of the historical difficulties of the Gospels, and as supplying proof which nothing but the stubbornness of prejudice or a fixed purpose to disbelieve can resist, that they are nar-

ratives of fact. Students of Scripture who wish to see how the real or supposed difficulties connected with our Lord's Genealogy, for example, or with the Purification of the Temple by Christ, or with the cure of the Gadarene Demoniacs, or with a multitude of similar points, vanish before a clear-sighted and robust Christian intelligence, will do well to track Dr. Ebrard through the series of learned and masterly discussions which make up this section of his book. The latter of the two great divisions of the work already named joins issue with the mythical theory of Strauss, and with other monstrous imaginings of modern Germany as to the origin of the Gospels, and then by a broad and vigorous induction, drawn especially from the pre-Christian expectation of Messiah, from the character of the apostolic Epistles, and from the life and journeyings of St. Paul, establishes on sure foundations the authenticity of the writings which pass under the names of the four evangelists. With this branch of his argument the author connects what is obviously necessary to the completion of it—an extended critical inquiry into the actual origin of the Gospels, which, like the rest of the work, teems with the fruits of a rare erudition breaking forth into mighty life under the hand of a no less rare fellowship of genius and Christian feeling. We strongly recommend this solid and invaluable book to all young ministers and students of the New Testament history. It is one of the few works which deserve to be digested into the intellectual substance of their readers; and the wider the circulation of it within the area we have indicated, the better will it be for the cause of genuine learning, of unsophisticated philosophy, and of true evangelical faith.

The translator, the editor, and the publishers alike claim our thanks for enabling Dr. Ebrard to speak to multitudes who need his instruction, but who could not, without their assistance, have enjoyed the advantage of it.

From the Popular Science Review.

GREEK FIRE: ITS ANCIENT AND MODERN HISTORY.

WHAT is Greek Fire? The question is not one of to-day, but of ages. Friar Bacon was asked the question, or, at all events, he, in a sentence or two as difficult to understand as obscurest alchemist could wish, essayed to answer it. His friend, Friar Bungay, who was neither so imaginary a man nor so gross a quack as Sir Edward Bulwer Lytton has depicted him, and who, in his day, did many marvels, made a guess at it; the Princess Anna Comnena supplied a formula for it; Charles du Fresne, the Byzantine historian, cultivated many and curious researches in respect to it; Sir William Temple took it under his literary protection, and gave its introduction to the world, within a century; the historical commentators on the History of St. Louis—Ducange and Joinville—were each particular in their inquiries and descriptions; Gibbon, as we shall see, was careful, to a nicety, to dig out every fact; Chambers advanced at least three speculations on it; the learned Beckman of course looked and looked, and said all he could, which was not much but good; and, in fine, from the thirteenth century to this, the nineteenth, somebody has always been speculating and nobody has been satisfied.

At last, when the Dryasdust fraternity were getting into that state of obscurity as to affirm, with all profundity and good faith, that there never was such a thing as Greek fire, that the whole story was a myth of the middle ages, that Greek fire ranked with flexible glass and the elixir vitae—General Gilmore, Federal general before Charleston, in Southern America, startled the learned by pitching a shell of so-called Greek fire a distance of four miles at least, and into a town. What is Greek fire? At once the question went up again, and every body asked every body, and every body, or nearly so, said they did not know; or made a guess like the Princess Anna Comnena, or divined obscurely, like Roger Bacon, as if they

did know, but did not like to tell. And still the question is on the *tapis*. Let us try to answer it.

ANCIENT GREEK FIRE.

Regarding the ancient Greek fire, the facts that have been collected about it are at present to be sought for, mainly, from the various authors whose names have been given above.

Gibbon, in describing the destruction of the Saracen fleet in the harbor of Constantinople, in his tenth volume of the *Rise and Fall*, gives a graphic account of the ancient Greek fire. He says:

"In the two sieges, the delivery of Constantinople may be ascribed to the novelty, the terrors, and the real efficacy of the Greek fire. The important secret of compounding and directing this artificial flame was imparted by Callinicus, a native of Heliopolis, in Syria, who deserted from the service of the Caliph to that of the Emperor. The skill of a chemist and engineer was equivalent to the succor of fleets and armies; and this discovery or improvement of the military art was fortunately reserved for the distressful period, when the degenerate Romans of the East were incapable of contending with the warlike enthusiasm and youthful vigor of the Saracens. The historian who presumes to analyze this extraordinary composition should suspect his own ignorance or that of his Byzantine guides, so prone to the marvelous, so careless and, in this instance, so jealous of truth. From their obscure and perhaps fallacious hints, it would seem that the principal ingredient of the Greek fire was the naphtha or liquid bitumen, a light, tenacious, and inflammable oil, which springs from the earth and catches fire as soon as it comes in contact with the air. The naphtha was mingled, I know not by what methods, or in what proportions, with sulphur and with the pitch that is extracted from evergreen firs. From this mixture, which produced a thick smoke and a loud explosion, proceeded a fierce and obstinate flame, which not only rose in perpendicular ascent, but likewise burnt with equal vehemence in descent or lateral progress; instead of being extin-

guished, it was nourished and quickened by the element of water; and sand, urine, or vinegar were the only remedies that could damp the fury of this powerful agent, which was justly denominated by the Greeks, the liquid or maritime fire. For the annoyance of the enemy, it was employed, with equal effect, by sea and land, in battles and in sieges. It was either poured from the rampart in large boilers, or launched in red-hot balls of stone and iron, or darted in arrows and javelins, twisted round with flax and tow, which had deeply imbibed the inflammable oil; sometimes it was deposited in fire-ships, the victims and instruments of a more ample revenge, and it was most commonly blown through long tubes of copper which were planted on the prow of a galley, and fancifully shaped into the mouths of savage monsters that seemed to vomit a stream of liquid and consuming fire. This important art was preserved at Constantinople as the palladium of the State: the galleys and artillery might occasionally be lent to the allies of Rome; but the composition of the Greek fire was concealed with the most zealous scruple, and the terror of the enemy was increased and prolonged by their ignorance and surprise. In the treatise on the Administration of the Empire, the royal author (Constantine) suggests the answers that might best elude the indiscreet curiosity and importunate demands of the Barbarians. They should be told that the mystery of the Greek fire had been revealed by an angel to the first and greatest of the Constantines, with the sacred injunction that this gift of heaven, this peculiar blessing of the Romans, should never be communicated to any foreign nation; that the prince and subject were alike bound to religious silence under the temporal and spiritual penalties of treason and sacrilege; and that the infamous attempt would provoke the sudden and supernatural vengeance of the God of the Christians. By these precautions the secret was confined, above four hundred years, to the Romans of the East; and at the end of the eleventh century, the Pisans, to whom every sea and every art were familiar, suffered the effects without understanding the composition of the Greek fire. It was at length either discovered or stolen by the Mohammedans; and in the holy wars of Syria and Egypt they retorted an invention, contrived against themselves, on the heads of the Christians. A knight, who despised the swords and lances of the Saracens, relates with heartfelt sincerity his own fears and those of his companions at the sight and sound of this mischievous engine that discharged a torrent of the Greek fire, the 'feu Gregeois,' as it is styled by the more early of the French writers. It came flying through the air, says Joinville, (*History of St. Louis*), like a winged long-tailed dragon, about the thickness of an hog's head, with the report of thunder and the velocity of lightning; and the darkness of the

night was dispelled by this deadly illumination. The use of the Greek, or, as it may be called, the Saracen fire was continued to the middle of the fourteenth century, when the scientific or casual compound of niter, sulphur, and charcoal effected a new revolution in the art of war and the history of mankind."

From certain allusions as to the manner in which the Greek fire was used—namely, that it was cast from catapults and slings—I was inclined at one time to believe that a solid ball was cast from the engine, and that it ignited in its course through the air. On further inquiry I feel that this hypothesis is untenable, the arguments of Beckman appearing to be conclusive that the substance employed was liquid, and was even sometimes thrown from engines constructed after the manner of our modern fire-engines. He remarks that, in the East, engines were employed not only to extinguish but to produce fires:

"The Greek fire invented by Callinicus, an architect of Heliopolis, a city afterwards named Balbec, in the year 678, the use of which was continued in the East till 1291, and which was certainly liquid, was employed in many different ways, but chiefly on board ship; being thrown by large fire-engines on the ships of the enemy. Sometimes this fire was kindled in particular vessels, which might be called fire-ships, and which were introduced amongst a hostile fleet; sometimes it was put into jars and other vessels, which were thrown at the enemy by means of projectile machines; and sometimes it was squirted by the soldiers from hand engines, or, as it appears, was blown through pipes. But the machines with which this fire was discharged from the fore part of ships could not have been either hand engines or such blow-pipes. They were constructed of copper and iron, and the extremity of them sometimes resembled the open mouth and jaws of a lion or other animal; they were painted, and even gilded, and it appears that they were capable of projecting the fire to a great distance."

In some of the ancient drawings of ships, we see as a figure-head an animal with rays issuing from the mouth, as if fire were being vomited forth—a representation, probably, of the ancient fire-ship described above. Even in the present day the same kind of figure-head is sometimes erected.

Continuing his narrative, Beckman states that the machines by which the liquid substance was thrown forth were

expressly called, by the ancient writers, spouting engines.

"John Comeniata, speaking of the siege of his native city, Thessalonica, which was taken by the Saracens in the year 904, says that the enemy threw fire into the wooden works of the besieged, which was blown into them by means of tubes, and thrown from other vessels. This passage, which I do not find quoted in any of the works that treat of Greek fire, proves that the Greeks, at the beginning of the tenth century, were no longer the only people acquainted with the art of preparing this fire, the precursor of our gunpowder. The Emperor Leo, who about the same time wrote his *Art of War*, recommends such engines, with a metal covering, to be constructed in the fore part of ships; and he twice afterwards mentions engines for throwing out Greek fire."

Great attention has been paid to the question: At what period was the Greek fire introduced into warfare? Sir William Temple traced it as far back as the seventh century, but Gibbon treats the argument as destitute of fact, and, indeed, as false. Theophanes, however, and Cedrenus, trace it back to the year 660, when, they say, it was discovered by the engineer Callinicus, of Heliopolis, or Balbec, who, it is reported, learned the art of chemistry from the Egyptians, the fathers of the art. Nay, by others the discovery has been traced back to the pure Greek and Roman period, the invention being assigned, by Joseph Scaliger, to one Marcus Gracchus, or Græcus, and its application being declared as connected with the wars between the Greeks and Romans, and as common to both sides. Respecting this last-named hypothesis, I have only to state, that no direct testimony for its support is to be found. The assertion is made purely on inferences drawn from the Greek and Roman writers. By the same process of reasoning I think the invention might be traced back earlier still, even through our own biblical records, and through the Vedas. There is nothing improbable, indeed, in the hypothesis of a very early origin of Greek fire; for there are an immense number of minor historical details, which would lead, by circumstantial evidence, to the conclusion that the discovery is traceable to what may be called the second grand historic period of the world's history. In law a great many human lives have been taken on evidence infinitely less reliable; but men of science being naturally, from their love of the demon-

strative, the antipodes of the lawyer, and having no legal subtleties, shams, and glib inferences from nothing in their hearts, despise so-called circumstantial evidence, as meaning what the cleverest sophist can best present from the smallest data, and as unworthy of all serious regard. They therefore will go, I doubt not, as a man, with Gibbon, in believing nothing absolutely about Greek fire until they have clear knowledge of the time when the invention was actually used in warfare, which would bring it down to the ninth century.

This much we know: that there was, under the Constantines, a liquid substance which, discharged from a catapult, bow, or sling, ignited in the air spontaneously. We know that the fire thus produced was very terrible in its effects, and we learn that, as the use of gunpowder came to be better known, Greek fire became of no importance: gunpowder blew it out of the field.

It still remains an interesting question: What was the nature of this Greek fire fluid? On this point nothing positive remains. The Princess Anna Comnena says it was composed of sulphur, resin, and oil. Roger Bacon is supposed to have given two of its constituents—namely, sulphur and saltpeter—but to have hidden the third in the absurd sentence, (at least, to us absurd,) "Luru vopo vir Can utriet!" but in the sentence referred to, Bacon may be referring to gunpowder. In a word, it is hopeless, in the confusion surrounding the whole subject, to come to any decisive opinion. At the same time it is not improbable that, in the main, the formula of the Princess Anna Comnena is not far from the truth. Our difficulty in understanding her formula lies in the construction we put on the word "resin." We are not departing a letter from what is known at the present day in chemical science to suppose that a so-called resin was used, which, on admixture with oil and sulphur, formed a compound that would spontaneously ignite on exposure to the air. In another way we sometimes have fire produced in these days—when saw-dust and oil are admixed, and what is called spontaneous combustion ensues.

The remarkable feature of the old Greek liquid is, that it must have been very safe in the mass, as safe as turpentine or common naphtha. Had not this been the case, it could never have been carried in

wooden galleys or pumped through engines in torrents. It must have ignited in the air from the extreme diffusion of its oxydizable constituents, and their exposure to oxygen: lighted in this way at one point, the flame would rapidly extend, with explosion; and the fire, as Joinville states, would come down with the velocity of lightning.

I shall take occasion at some future day to lay before the public some carefully elicited facts, of an experimental order, in reference to the compound described by the Princess Anna Comnena; for the subject is one not of historical interest merely, but of national importance. I do not suppose that any fluid, such as is described by the Byzantine writers, will again be used in shells or during bombardment; but in these days, when every vessel has a steam-engine, and could have a forcing engine to be worked by steam, it might be that an enemy, supplied with a combustible fluid such as has been described, would prove of terrible danger in attacking wooden ships, especially those belonging to the mercantile marine.

MODERN GREEK FIRE.

In order to understand the revival of "liquid fire," or, if we must still continue to call it so, "Greek fire," we must descend to the year 1680, the year in which was discovered the method of making a compound called a "*pyrophorus*." In that year a chemist, named Homberg, endeavored to extract from human feces a colorless and odorless oil, which should have the power of fixing mercury. Macquer, who is the most accurate authority on these points, tells us that Homberg, when he had mixed the substances, upon which he was operating with different matters, was much surprised, while taking the *caput mortuum* of one of these mixtures out of the retort, four days after it had been operated on, to see it kindle and burn strongly as soon as it was exposed to the air. Homberg recollected that this was the residuum of a mixture of alum and human feces from which he had obtained all that he could by means of a red heat. He repeated the process, and obtained the same result. Having published his discovery, other experimentalists also repeated the proceeding, the statement was fully confirmed, and the name "*pyrophorus*"—(*pur*,) fire; (*pher'o*,) I bear—was soon applied

to the spontaneously ignitable substance. From the Germans it also got the name of "luft zunder," or air tinder.

Until the year 1713 it was believed implicitly, that in order to make the pyrophorus, human feces were essentially necessary; then Lemerier the younger instituted a new inquiry, in which he substituted honey for the other animal matter; the result was the same: afterwards he used sugar, then flour, and with like effects. He was followed by the eminent chemist, Dr. Lejay de Savigny, who clearly proved, that by the addition of any inflammable body whatever, a pyrophorus may be made of all such substances as contain vitriolic acid combined either with earth, or with an alkaline salt, or with a metallic substance. Little improvement in the composition of the pyrophorus was introduced until the time of Gay Lussac, with whose name all moderns are familiar. Gay Lussac modified the process by placing lamp-black, instead of the animal matters named, in the retort. A little further on, sulphate of magnesia was substituted by the same chemist for alum; and at last the following formula was given as the best for an active pyrophorus: lamp-black, 15 parts; sulphate of potassa, 27.3 parts. This compound ignites in the air with great rapidity, yielding sulphurous acid in large quantities, and setting fire in any open place to all combustible matter, with an energy that is peculiarly its own.

The pyrophorus remained up to our own time a substance, mainly, of chemical interest. It was exhibited at lectures as a means for showing off a startling experiment, but not more. I can find indeed but one passage in chemical literature which refers to the use of spontaneously inflammable substances in war. That sentence is in the article on Gunpowder in the chemical essays of the learned Dr. Watson, published in 1793. He there says, in speaking of the antiquity of gunpowder:

"There are substances in nature from the combination of which it is possible to destroy a ship, a citadel, or an army, by a shower of liquid fire spontaneously lighted in the air. Every person who is aware of the dreadful fiery explosion which attends the mixture of two or three quarts of spirit of turpentine with strong acid of niter, must acknowledge the truth of the assertion; but the simple knowledge of effecting such a destruction is a very different matter from the knowledge of its practicability,

though future ages may, perhaps, invent as many different ways of making these substances ignite in the air, so as to fall down in drops of fire, as have been invented in making gunpowder since the time of Bacon."

We may pass from the time of Dr. Watson to the year 1853. In the latter year, the subject of "liquid fire" began to occupy the attention of Mr. Wentworth Scott, then a student of chemistry at the Royal College of Chemistry in Oxford-street. Mr. Scott commenced his work by making a pyrophorus; and, after various modifications he formed one which promised to be most effective, and which, I believe, still might be used with considerable effect. He brought a specimen of this to me, at Mortlake, where I then resided, and showed to me its properties by filling a small glass shell with the substance, and then throwing the shell against a high wall in a garden, so as to break the glass and distribute the contents. As the solid particles descended, they burst into flame with great force, and descended to the earth in a perfect shower of flame, burning for some time afterwards with great intensity. A few days later, Mr. Scott came again, bringing what he called "liquid fire;" bringing, that is to say, a solution which on being shot into the air burst into fire spontaneously, and which, spread over any surface exposed to the air, also burst into flame. Mr. Scott made some of this solution in my laboratory, and we at once tried its effects. I tipped arrows with tow, and, saturating the tow with the liquid, propelled the arrows from a bow; the tow invariably took fire spontaneously in the air, and combustible articles into which the arrows were driven were fired with wonderful rapidity and certainty.

Within a few weeks after the production of this liquid, Mr. Scott had devised a shell in which it could be placed, so as to make it available for purposes of war. This shell consisted of two parts; of an outward part and of an inner or exploding tube. The outer part or cavity was to be charged with the fluid and closed; the exploding tube was to be filled with ordinary explosive matter that could be discharged, either by a fusee or by percussion. On the discharge, the whole shell would burst, and the contained spontaneously igniting fluid would be distributed.

After witnessing Mr. Scott's numerous experiments, I urged him at once to lay

them before the Board of Ordnance. He did so, and was received several times. The Russian war was in progress at the period when Mr. Scott was being treated with by this Board. The members were anxious to handle the newly proposed implement of war, but were either too much afraid of it, or were too bound down to official routine to be actuated by the same decision and common sense that men of business are given to cultivate. They simply played with the question, (I can use no other word,) dangled it, took it up warmly, and then put it down again as if they had themselves been burnt, without fire. They asked for an experiment of Mr. Scott. He did many successfully: they promised to give him an experiment with a gun and a shell; but when he went to perform it, he was advised that he must find shells at his own expense. There were hundreds of shells ready made and belonging to the country, which would have answered his purpose, but he was refused the use of them. He must have his own shells made. Naturally disgusted with the indecision and narrowness of these circumlocution officials, Mr. Scott withdrew from the inquiry and was by-and-by supplanted by another candidate with liquid fire, who in time also was allowed to sink into neglect: I refer to Captain Disney. Mr. Scott's researches nevertheless were not lost. A very ingenious and enthusiastic officer, Captain Norton, whose valuable inventions have been but poorly appreciated, took up the subject, and invented a small shell for an ordinary rifle, which would carry sufficient liquid fire to do immense mischief. The shell burst, or rather broke, on striking, and set free the fluid. With one of these shells, and with his own rifle, Captain Norton, at six hundred yards, could fire a piece of ordinary sailcloth, stretched out like a sail, with absolute precision. I calculated that eighty men, armed with Captain Norton's piece, could plant in a wooden ship, at six hundred yards' distance, one gallon of liquid fire fluid every four minutes. Taking all failures fully into account, it were impossible for a ship so treated to endure long. She must soon be on fire in several hundred points, and what is more, she never could be safe again: for though the fire were effectually suppressed at the moment, the chances are that it would break out at a subsequent period.

Foreseeing the application of liquid fire

in warfare, and being aware that the Russian government was actively extending inquiries on the application of chemistry in warfare, I communicated to the *Times* a letter on the whole subject, which letter was published in 1855. I explained there what Mr. Scott had done, and what might yet be done. The communication, copied largely into English and continental journals, passed to America, and was made the subject of considerable comment there.

With the close of the Russian war the question of liquid fire dropped, and we hear no more of it until this year, when we find that General Gilmore, on the second Thursday in August, threw shells charged with Greek fire into Charleston. That the effect, however partial, was sufficiently terrible, is proved by the fact that the Confederate general (Beauregard) sent back a denunciation of the missile forwarded to him by the cannon's mouth; declaring it to be the most villanous compound ever used in war.

Since then, Gilmore has from time to time used "Greek fire." Why he has not used it more, is due to the fact that his shells for projecting it were not perfect. Some of them were intended to burst by percussion, but failed; in others, the fusee employed did not answer; the shell either burst at short distance, or fell without bursting, and was obtained by the enemy, and put out before doing harm. At Springfield, a new fusee and shell, for the special purpose of "Greek fire shells," are being, I believe, prepared at this time, so that we are sure to hear more on the subject if the war in America continues.

From these facts we may pass to the consideration of the composition, properties, and mode of action of modern Greek fire. The first thing worthy of note is that the principle is the same in this as in the ancient method. In both cases, a body greedy, under favorable conditions, for oxygen, bursts into flame on being distributed over a wide surface in the air, owing to the fact of the combination of its oxydable parts with the oxygen of the air. In the old Greek fire, the burning body was probably a hydro-carbon; in the modern, the body commonly used is phosphorus. There is, at the present time, in England, a patent by a gentleman named Macdonald, in which the composition of the fluid used is given as phosphorus, bisulphide of carbon, and naphtha. This composition, which has been de-

scribed by its patentee in the columns of one of the daily papers, differs somewhat in detail from that of Mr. Scott, but it answers as well as need be for the purpose of explaining the mode of action of the fluid.

When widely distributed and exposed to the air, one of the ingredients of this fluid, the phosphorus, combines eagerly with oxygen, and bursts into flame. If phosphorus be merely pressed out over a wide surface in a thin layer, it begins to burn, and the thinner the layer the quicker the combustion. It would, of course, be too troublesome to carry out extension of phosphorus by pressure for the use of the soldier, and so another plan is adopted. It happens that phosphorus is extremely soluble in the fluid known as bisulphide of carbon. In this fluid phosphorus dissolves almost as sugar dissolves in water. Rendered soluble in the bisulphide of carbon, the phosphorus remains as unchanged phosphorus spread over a large surface of a fluid which prevents it from burning so long as it is in contact with it. The solution of phosphorus thus prepared, if put in a closed bottle, may be kept for years without undergoing any change, and without danger. I have some that has been in bottle for seven years, and it is the same as ever. But now comes a new fact. Bisulphide of carbon is a volatile body at ordinary temperatures; phosphorus is not volatile. Whenever, therefore, the solution of bisulphide of carbon and phosphorus is poured over any surface in the open air, the bisulphide of carbon, being volatile, evaporates, leaving the phosphorus distributed in a fine layer. Thus exposed, the oxygen of the air unites with the phosphorus, flame is produced, and any other combustible body is fired.

The principle once established, endless modifications may be introduced upon it; for instance, Mr. Macdonald adds naphtha, which, when fired by the phosphorus, burns with great fury. Mr. Scott has a method that has not yet been published, by which the fluid continues to burn even if it be covered with water: and there would be no difficulty in so producing it, that it should be absolutely inextinguishable until it was itself burnt out.

The occurrence of flame—that is to say, the moment of combustion—is not, however, always to be calculated on with precision. The temperature of the air, the

force of the wind, and the extent of surface over which the fluid is spread, all make great differences. Thus, in an experiment with a specimen of Scott's liquid fire fluid, I found that, at a temperature of sixty-three degrees Fahrenheit, with a fair wind blowing, combustion took place in four minutes and a half, the fluid being distributed over dry wood; but when the same fluid was distributed in the same way, and at the same time, over moist wool, combustion was delayed for half an hour. It is, at the same time quite unnecessary to dwell on such differences as are here described: to the practical man they would be infinitely less difficult to meet than many others, occurring in the management of weapons of war. The engineer would have necessarily to make his own calculations on each firing, taking into account the temperature, the wind, and the character of the structure on which the fluid was about to be cast.

Regarding Greek fire as we at present understand it in England, I have only one other word to add, and that is most important. I have many times tried to impress it, and must, by repetition, do so again. It is a caution. It is this: that if we were at war with any nation, and that nation were to throw a gallon of liquid fire fluid into any one of our wooden ships, that ship would never be absolutely safe again. The combustion might be prevented for the moment; it might be (assuming always that Mr. Scott's new compound is not in question) suppressed after combustion; but the fire, after all, is only suppressed: that is the great point. So soon as the water has evaporated or so soon as the cover is removed—though a month, a year, a century had elapsed—the fire would break out; and, paradoxical as it may seem, the more effectual the means of suppression had been, the more determinate would be the combustion when that suppression was removed.

I can consider no disaster more terrible than the lodgment of a few shells of Greek fire fluid on board a wooden vessel of war. What if such a vessel should even come out of a great fight victorious! Whither between her beams, and floorings, and crevices has the inflammable liquid not permeated? How safe is her magazine? When her carpenters afterwards, at any time, are taking her to

pieces, in parts, for repair, what guarantee is there they shall not remove boards that are, on exposure, transformed into gigantic self-lighting lucifer matches?

It remains only for me to describe, in brief terms, such facts as are known in relation to American Greek fire. The scientific narrative will then be as complete as it can be rendered at the present moment.

The American pyrophorus is stated to have been invented by Levi Short. It is somewhat difficult to arrive at any correct conclusions as to the precise character of the composition employed. I believe, however, that two forms are resorted to. In one of these a fluid is used, as in Mr. Scott's plan; the fluid is simply poured into a shell, and the shell, in exploding, discharges its contents, ignition taking place on exposure to the air; the flame produced is described as yellowish and dull, as not very vigorous in action, and as evolving a white smoke. There can be no doubt that the fluid exhibiting these characteristics, on ignition, consists simply of phosphorus dissolved in bisulphide of carbon, and it is also probable that, as an invention, it is an imitation of the English patent.

But there is another description of American Greek fire which is new in its details. It is described that, in this case, the spontaneously combustible material is of a dark color, and is inclosed in tin tubes about four inches long, and lightly closed at one end. These tubes, when opened at the end, spontaneously ignite, on exposure to the air, at the open end, and burn for so long a time as twenty minutes with a brisk flame, evolving a strong smell of sulphur. When they are opened high up in the air, the combustible matter falls in a stream or shower of fire. From the description thus given, there can, I think, be little doubt that the substance used is the old pyrophorus of Gay Lussac, the composition of which has been given above. Or it may consist of common gunpowder saturated with bisulphide of carbon containing a very small quantity of phosphorus in solution. The tin tubes containing the spontaneously combustible body are packed in a shell having a tube for the charge of powder that is to produce rupture of the shell. The isolation of the combustible matter in separate tubes is new, and is an ingenious improvement. It happens often, that when a globe containing the combustible stuff is burst by

discharge of powder, the ignition takes place immediately, and the effect would be too rapid to be injurious to an enemy. By placing the matter that is to ignite in different chambers or cylinders, this is avoided; the shell on bursting distributes the tin cases like so many fragments; these on falling easily break, set free their contents, and become so many centers of flame.

In practice, the results obtained from Greek fire, when it is thrown from a shell, are wanting in precision. It seems that General Gilmore first used percussion shells, which were to explode on striking, and to distribute the pyrophorus. The shells did not act correctly; many of them fell without being discharged. The fact led the general to apply for a peculiar fusee, which should fire the powder with such accuracy, that when the shell was crossing a given spot, it should burst in the air, and rain down fire on the place beneath. There is as yet great expense in the manufacture of the perfect shells and fusees; a circumstance which fully accounts for the present limited application of the principle, in the great American contest for the freedom of the slave.

For my own part, I am somewhat in doubt whether a shell, as the projectile of Greek fire, will be retained in use. It is more probable that a catapult worked by a steam-engine will be found the best means of throwing the combustible. If this plan were adopted, the liquid would merely require to be inclosed in earthenware or glass jars, that would break on contact with solid matter, in falling. With a properly constructed engine, so contrived as to throw liquid fire in earthenware or glass globes of six inches diameter, ten thousand gallons of the combustible could easily be thrown, per hour, upon any given point within range.

I have now placed before the reader the facts *practically* known in respect to Greek fire, and its applications in war. But it must not be inferred that all that has thus been done is all that science can do. I feel it a duty to state openly and boldly, that if science were to be allowed her full swing, if society would *really* allow that "all is fair in war," war might be banished at once from the earth as a game which neither subject nor king dare play at. Globes that could distribute liquid fire could distribute also lethal agents, within the breath of which no

man, however puissant, could stand and live. From the summit of Primrose Hill, a few hundred engineers, properly prepared, could render Regent's Park, in an incredibly short space of time, utterly uninhabitable; or could make an army of men, that should even fill that space, fall with their arms in their hands, prostrate and helpless as the host of Sennacherib.

The question is, shall these things be? I do not see that humanity should revolt; for would it not be better to destroy a host in Regent's Park by making the men fall as in a mystical sleep, than to let down on them another host to break their bones, tear their limbs asunder, and gouge out their entrails with three-cornered pikes; leaving a vast majority undead, and writhing for hours in torments of the damned? I conceive, for one, that science would be blessed in spreading her wings on the blast, and breathing into the face of a desperate horde of men a prolonged sleep—for it need not necessarily be a death—which they could not grapple with, and which would yield them up with their implements of murder to an enemy that in the immensity of its power could afford to be as merciful as Heaven.

The question is, shall these things be? I think they must be. By what compact can they be stopped? It were improbable that any congress of nations could agree on any code regulating means of destruction: but if it did, it were useless; for science becomes more powerful as she concentrates her forces in the hands of units, so that a nation could only act, by the absolute and individual assent of each of her representatives. Assume, then, that France shall lay war to England, and by superior force of men should place immense hosts, well armed, on English soil. Is it probable that the units would rest in peace and allow sheer brute force to win its way to empire? Or put English troops on French soil, and reverse the question.

To conclude. War has, at this moment, reached, in its details, such an extravagance of horror and of cruelty, that it can not be made worse by any art; and can only be made more merciful by being rendered more terribly energetic. Who that had to die from a blow would not rather place his head under Nasmyth's hammer, than submit it to a drummer-boy armed with a ferule.

These thoughts are submitted in order to call forth more thought: this whole paper,

in fact, is essentially dedicated to the Peace Party, for the consideration of its members, and as indicating a way, infinitely shorter than their own, by which their great objects may be achieved. Let them urge the government to intrust men

of science, under proper superintendence, to prepare, as they list, known, but yet unformed, engines of destruction; and in a very short interval the nations may, in truth, turn their swords into plowshares and learn war no more.

From the Popular Science Review.

NOTES ON EARTHQUAKES.

It was very generally believed, only a few years ago, that the earth was not more than six thousand years old. Astronomers and geologists have, however, ascertained, beyond a doubt, that the planet we inhabit has not only been rolling in space for untold ages, but has undergone numerous physical changes. They also believed that this planet was once in a condition of complete fluidity, and almost up to the present time they considered the principal portion of the interior of the earth to be composed of mineral substances liquefied by intensity of heat. Of late, the labors of mathematical investigators have gone far to prove that the central nucleus of the earth is *not* altogether composed of molten mineral substances, so as to form a central igneous ocean, but that lakes or small seas of lava are distributed throughout her mass. Whatever truth there may be in this theory, it is to *natural causes* that we must look for the explanation of the phenomenon of the earthquake, that agent which has played so important a part in again and again remodeling the surface of the earth.

From numerous observations made in deep mines, it is found that the temperature of the earth increases as we descend at the rate of one degree of Fahrenheit for every fifty or sixty feet after the first hundred. The phenomena of hot springs, and the emission of vast masses of molten mineral matter, volcanic ashes, mud, etc., from volcanos, with calculations founded on the known specific gravity of the earth, all tend to convince scientific men that the earth possesses a high internal temperature which is derived from *internal sources*.

It is impossible to read the description given by Sir Charles Lyell of the phenomena of earthquakes and volcanos without being satisfied that both of these agents have, to a certain extent, a common origin; but it is also certain that there are two modes of action in earthquake forces of disturbance—namely, when they act with local intensity, as in volcanic action, or by a succession of earthquakes, as in the elevation of the coast of Chili in 1822 and 1823; and when they act uniformly, and lift up large tracts of land, as the coast of Sweden is now being raised, with a slow and tranquil, upward movement, and the west coast of Greenland depressed, without any of those paroxysmal effects which we behold in the volcano and the earthquake shock.

No less than five centers of volcanic action exist within the Atlantic Ocean. In Europe, the centers of existing volcanic action are Sicily, Naples, Stromboli, the Archipelago, and Iceland; while in Auvergne, Bohemia, Saxony, and other European localities, we have examples of volcanos which have become extinct since the period of the older Tertiary deposits. In the region of the Andes active and extinct volcanos alternate for many hundreds of miles, and tremendous earthquakes frequently precede the different outbursts. Five active volcanos traverse Mexico from west to east, among which is the famed Jorullo, which is said to have been elevated to a height of sixteen hundred feet above the level of the plain of the Malpais in June, 1759. There is an active volcanic region from the Aleutian Isles, through the Indian Archipelago, of greater extent than even that of the Andes.

In Java alone there are said to be thirty-eight volcanos, several of which are more than ten thousand feet high; while Bera-pi, in Sumatra, is more than twelve thousand feet above the sea. Teneriffe is also twelve thousand feet, and Etna nearly eleven thousand feet in height.

To enumerate the different volcanic regions of the globe would be impossible in a mere sketch of the subject, and it must suffice here to say that several hundreds of volcanos, in different stages of activity, are known throughout the globe.

The effect of volcanic eruptions in those regions which are the centers of volcanic action is scarcely less important as regards human life and safety than are earthquakes. The destruction of the cities of Herculaneum and Pompeii by vast masses of volcanic matter erupted from Vesuvius is an example; as are also the overwhelming of the town of Stabiae in the time of Pliny, and the destruction of the town of Torre del Greco by torrents of burning lava in 1794. But these are not the most striking examples of volcanic eruptions to be met with. The volcano Coseguina, which is situated on the Gulf of Fonseca, in Central America, poured forth, in January, 1835, such a mass of volcanic ashes and other matter that it covered the surrounding country for the distance of twenty-five miles to the depth of ten feet, destroying the woods and dwellings. Sir Charles Lyell records of this eruption, that thousands of cattle perished, their bodies being, in many instances, one mass of scorched flesh; that many birds and wild animals were found suffocated in the ashes; and that the neighboring streams were strewed with dead fish. This great eruption of Coseguina was accompanied by an earthquake which was felt over more than one thousand miles, the volcano having been dormant for twenty-six years.

"Moya," or volcanic mud, which is composed of ashes and liquefied snow, descended, in 1797, from Tunguaragua, one of the Quito volcanos, and filled valleys six hundred feet deep, a thousand feet wide, and many miles in length, with a pulpy material, which dammed up rivers and caused lakes.

The eruption of Skaptar Jokul, in Iceland, in 1783, destroyed no less than twenty villages, and caused the death of no less than nine thousand human beings out of a population which did not exceed fifty

thousand, together with an immense number of cattle. Professor Bischoff has calculated that the mass of lava brought up from the subterranean regions by this single eruption surpassed in magnitude the bulk of Mont Blanc. At all events, there were erupted two enormous streams of lava, which flowed in nearly opposite directions, one of which was fifty miles long, and from twelve to fifteen miles in breadth, and the other forty miles in length by seven in width. The elastic forces that eject these vast masses of volcanic materials from volcanic vents must be very great. The crater of Cotopaxi is more than three miles and a half above the sea, yet it has been known to eject a mass containing more than a hundred solid yards of rock to a distance of nine miles; and it has been calculated that a column of lava one foot square, raised to the height of Cotopaxi, would weigh more than seven hundred and fifty tons.

We have also evidence that volcanic eruptions into the sea, through fissures in the sea-bed, are by no means uncommon, though we have little opportunity of judging of their effects. Islands have been raised by volcanic elevation within the historical period, such as the island in the Aleutian group, described by Langsdorff, three thousand feet high, and which was elevated in 1793. In the same year an island rose in the Azores; it was about a mile in circumference, and about three hundred feet above the level of the sea. It was composed of volcanic ashes and other light materials, and was soon washed away by the sea. Santarino, White Island, New Burnt Island, and several other islets in the Grecian Archipelago, are all due to submarine volcanic agency, and their elevation above the waters is recorded in authentic history. There are also numerous instances on record where the commanders of vessels have noted submarine eruptions, as evidenced by the escape of gases, and the destruction of marine animals.

The intimate manner in which great earthquake shocks are connected with volcanic phenomena, makes the subject of any direct evidence of volcanic action in the British Isles an interesting question. There is geological proof that in the earlier ages of the planet's history Great Britain possessed her active volcanos, and must have been shaken by earthquakes of terrible potency.

When the rocks that constitute the mass of Snowdon were being deposited in the seas of the lower Silurian epoch there must have been an active volcano near at hand, for there we have marine deposits, full of the remains of animals which lived in the Llandeilo and Caradoc periods, interstratified with felspathic ashes, traps, and porphyries which no doubt were erupted from a volcano into the air, and then fell and sank through the waves.

Every geologist who visits Edinburgh must be struck with the evidences of volcanic action, which must have been rife in that district during the Carboniferous period, and volcanic action combined with the stratifying operations of sea-waves and currents.

Limestone of the age of the Lias has been converted by a Plutonic rock into crystalline marble in the Isle of Skye; and the basaltic columns of the Giant's Causeway in Ireland, and the Isle of Staffa, are currents of lava which are of later date than the chalk, and probably were contemporaneous with some of the lavas of Central France and the Rhine.

There are two curious notices, brought forward by Dr. Thomas Wright, in the *Miscellanea of the Athenæum* of November 28th, respecting instances of recent volcanic action in the British Isles. He informs us that Adam de Marisco, a friend of Simon de Montfort, and an English scholar of the thirteenth century, has recorded a volcanic eruption in the Channel Islands as occurring in his time (about the middle of that century;) and also that the *Annuaire Register* for 1773 contains a notice of the eruption of "liquid fire" and "vast bodies of combustible matter" from Moel Famma, a hill on the borders of North Wales, on the thirty-first of January of the same year. These records are probably more singular than true; for in the case of Moel Famma no volcanic rock of any kind is marked by the geological surveyors on the hill, or in the district, and it is extremely unlikely that these accurate observers would have passed by relics of the "liquid fire."

Some geologists have argued that the phenomenon of volcanic action was far more developed in the early ages of the earth's history than at present, but further investigations into the philosophy of the subject throw more than a doubt on the truth of this theory. This constant earthquake and volcanic doctrine was invent-

ed to account for the earth tempests and continual blowing up of the earth's crust, which were supposed to be rife during the consolidation of a cooling planet. But the evidence which was believed to support this theory of the development of our planet breaks down on a calm investigation of facts. *We ignore the volcanic forces that still exist!* What lakes or sea of lava must underlie the volcanic districts of the Andes and Indian Archipelago at the present moment, and what masses of molten matter, which never appears at the surface, must be injected every year, in earthquake districts, into rock fissures, or into the beds of the different seas. Volcanic action, with its evidence of the earthquake, and great outpourings of traps, lavas, and other materials, has left its undoubted marks throughout the Cambrian, Silurian, Carboniferous, and every other geological period; but the Plutonic masses that have been erupted from the interior of the earth, and the earthquake movements which are known to have occurred since the commencement of the Tertiary periods, have been enormous, and may well cause us to pause ere we assign to any geological period in particular the peculiarity of an "earthquake age."

I have made the preceding remarks upon direct volcanic action, because intensity of earthquake action appears to be connected with volcanos and their effects. Indeed, Mr. Mallet, who is the highest authority upon the subject, believes that "an earthquake, in a non-volcanic region, may be viewed as an uncompleted effort to establish a volcano." Questions have arisen as to whether all earthquakes are produced by volcanic action, and an ingenious problem has been broached by Mr. Mackie, the editor of *The Geologist*, in the November number of that periodical, as to "whether some earthquakes may not be due to crystallization of rock masses under the pressure of superincumbent strata, and that they are 'the shocks' of the rupture of masses of dense strata, or the sudden slippings of one great rock formation over another." This theory of Mr. Mackie's brought forth a letter from Mr. Scrope, which is published in the December number of *The Geologist*, who refers earthquakes of all kinds to the same primary cause as the volcanic eruption; and thinks it quite "unnecessary to resort to any other, such as terrestrial electricity,

magnetism, crystallization, the breaking in of the roofs of imaginary subterranean cavities, or the condensation of vapor evolved from submarine volcanos." In this supposition I entirely agree with Mr. Serape, and believe that it is altogether unnecessary to resort to imaginary hypotheses to explain those phenomena which are accounted for by so many examples and recorded facts. I do not conceive that we have any evidence whatever to suppose that "snaps and jars," or earthquakes of any kind, are independent of volcanic phenomena, while we have so much evidence the other way. There is a motion of the earth's crust, which lifts and depresses enormous tracts of land, and which, as far as we know, acts equably and without paroxysmal violence; but these movements, however equable, must always be accompanied by occasional "snaps and jars," and the rending of the rocks in the interior of the earth. In short, the frequent occurrence of earthquakes such as we have lately experienced in England, is what, as geologists, we must expect, from our knowledge of volcanic phenomena, and the oscillatory movements of the crust of the globe which have happened throughout all geological time.

It is not, happily, in England that we experience much of earthquakes and their effects. It is in volcanic regions that severe earthquakes occur, and there the imagination can picture nothing more awful than their results. Mr. Mallet and M. Perrey, of Dijon, have catalogued systematically the different accounts of earthquake phenomena, and it has been calculated that several millions of human beings have been destroyed by earthquakes within the last four thousand years. Whether they occur along the line of the Andes, in the Indian Archipelago, in Sicily, or in Portugal, "Misericordia!" is the cry, and fearful indeed are the devastations which are witnessed by the survivors of such catastrophes.

Two hundred and fifty thousand persons were killed at the first earthquake of Antioch in the year 526, and sixty thousand during the second catastrophe, seventy-six years afterwards. In 1797, forty thousand persons perished from earthquakes in Quito. Sir Charles Lyell records that one hundred thousand people were killed by the Sicilian earthquakes of 1693, when the city of Catania and forty-nine other villages were leveled to the ground; and it was

ascertained that sixty thousand persons were destroyed in the course of six minutes, during the earthquake of Lisbon in 1755.

One account of the effect of a severe earthquake which happened as lately as 1861 will suffice as an example of the occasional effect of such catastrophes on human life and human welfare. The following is the record of Major Rickards of the destruction of the city of Mendoza, in South America. He says:

"I was absolutely struck dumb and immovable with horror at the scene which presented itself! I gazed along the whole length of a street; not a single house was there to be seen standing; all was a confused mass of 'adobes,' beams, and bricks! The street was filled up on a level with what remained of the walls of the houses on either side, which at a glance accounted for the fearful number of victims—upwards of twelve thousand out of a population of sixteen thousand—entombed beneath the ruins on that fatal twentieth of March, 1861. Nothing met my eye but desolation and ruins. For a mile around, on every side, nothing but a chaotic mass of destruction was visible, the *débris* of a large city razed to the ground in an instant. On approaching the Church of Santo Domingo, I saw lying about its precincts human skeletons and portions of the human form protruding from beneath the masonry. In many parts of the city I saw the same horrible exhibition—skulls, arms, legs, etc., lying about, some still undecayed. At last I retired to my quarters, meditating upon the dreadful catastrophe which had in a few seconds turned a gay and beautiful city into an enormous graveyard."

As late as June last, more than one thousand persons were killed, and many thousands injured, by an earthquake which destroyed in a moment the town of Manila. In volcanic districts, moreover, we learn that those paroxysmal earthquakes occur by which whole districts of land are permanently elevated or depressed; and these effects of earthquakes should be especially noted. In Chili, three hundred shocks of earthquakes were counted between the twentieth of February and the fourth of March, 1835, and the coast was permanently elevated. Admiral Fitzroy found beds of mussels, chitons, and limpets in a putrid state, but still adhering to the rocks, and raised ten feet above high-water mark. Mr. Darwin found similar shells at Valparaiso, at the height of thirteen hundred feet, and had no doubt that those shell-beds were elevat-

ed to their present position by a series of earthquake shocks which caused successive small uprisings. On the 19th of November, 1822, a most destructive earthquake occurred on the coast of Chili, the shock of which was felt throughout a space of twelve hundred miles from north to south, and an extent of country was elevated which was calculated to equal half the area of France. A similar history of upraised shells, sea-weeds, and other marine remains, was recorded at the time by Mrs. Graham. Sir Charles Lyell's celebrated proofs of the elevation and subsidence of the coast of the Bay of Baim,* and that the relative level of land and sea has there changed *twice* since the Christian era, are too well known to need description. As an example of a *more recent* elevation of the earth's crust, we may mention the instance brought forward by Sir Charles Lyell, in a lecture delivered before the Royal Institution in 1856. It occurred in the previous year (1855) in New-Zealand, simultaneously with a very severe earthquake; and an elevation of upwards of five feet, on the north side of Cook's Straits, affected the tide of the river Hutt to such an extent that it was almost excluded; while a depression on the other side of Cook's Straits caused the tides to flow up the river Wairua many miles higher than before the alteration of the land level by the earthquake. A regular "fault" was also exposed to view for the instruction of geologists, for a shift in the rock surface took place, and a "step" of rock, nine feet high, was raised for a distance of ninety miles.

With regard to the *depression* of land by earthquakes, we may instance the large tract known as "The Sunk Country," at New-Madrid, Missouri, which was submerged by earthquakes in 1811 and 1812. This depressed tract extends along the course of the White Water river for a distance of between seventy and eighty miles north and south, and for thirty miles east and west. The earthquake of Cutch, in 1819, caused a subsidence of land in one part of the delta of the Indus, and an elevation in another. In Sicily, in 1700, the ground at Maria di Niscemi, on the south coast, sank down in one place

to the depth of thirty feet; while, during the tremendous Lisbon* earthquake of 1755, the new quay, which was built entirely of marble, sank down to the depth of six hundred feet, carrying with it a great number of boats and small vessels, as well as a large number of persons who had fled there for safety. The effects of paroxysmal earthquakes in volcanic districts are so well known, and have been so often related, as to require no further description here.

There is, however, another motion of the earth's crust which lifts and depresses whole continents, without any violent earthquake movements. We know very little respecting these great elevating and subsiding movements. Mr. Darwin believes, from the intimate and complicated manner in which the elevatory and eruptive forces are connected with volcanic phenomena, we may confidently come to the conclusion that the forces which at successive periods pour forth volcanic matter are identical with those forces which, slowly, and by little starts, uplift continents. Again, Sir Charles Lyell, in his *Antiquity of Man*, remarks, that from what we know of the state of the earth's interior, we must expect that the gradual expansion or contraction of different portions of the planet's crust may be the result of changes and fluctuations in temperature, with which the existence of hundreds of active, and thousands of extinct volcanoes, is probably connected. There are large portions of the earth's surface which have been elevated above the level of the ocean in Africa, in the north of Europe, South America, and other parts of the world, which bear no signs of paroxysmal upheaval, of volcanic overflows, or of any other than extremely equable movements. Sir Roderick Murchison informs us that there are in Russia large areas, consisting of rocks of the age of the Lower Silurian deposits, which have been but partially hardened since they accumulated, which have never been penetrated by volcanic matter, and have undergone no great change, or disruption, during the enormous periods which have

* Ten miles west of Naples, abounding in marble ruins of old Roman villas, along the shore and under water and crumbling heathen temples.—EDITOR OF THE ECLECTIC.

* The Gothic Cathedral church was crowded with worshipers on that Saint's Day, with drapery and wax candles burning, setting every thing on fire when the building fell; burning multitudes to death, like the late catastrophe in Chili. Parts of the walls are still remaining, which we saw.—EDITOR OF THE ECLECTIC.

elapsed since their deposition in the bed of the Silurian seas.

It has been proved beyond a doubt, that the land in Sweden and Norway is gradually being elevated out of the sea; and Mr. Lamont, in his *Seasons with the Sea-Horses*, furnishes us with some remarkable evidence of the rapid elevation of the land around Spitzbergen, even the sealers remarking that "the sea is going back."

But we do not need to journey to Norway or Spitzbergen for proofs of the elevation of land. Great Britain has been elevated to an extent incredible to those who have not studied the subject, since the period of existing shells. The study of the drift and gravel deposits of this country will convince any geologist that by far the larger portion of Great Britain has emerged from the sea since the commencement of the glacial period, and that its emergence was extremely gradual and slow. I have myself seen numerous instances where stratified sand-banks, and loose gravel and shingle, occupy elevated positions in Scotland, England, and Wales, and of which the appearance at once forbids the conclusion that they were hoisted up to their present position by any sudden paroxysmal motion, or by any other action than a series of small successive uprisings, and the gradual, equable motion I have alluded to. As examples of these elevated marine gravels and drifts, I may mention one at Moel Tryfan, near Carnarvon, which occupies the summit of a hill platform, at a height of nearly fourteen hundred feet above the sea. I had the pleasure of visiting this ancient and remarkable raised beach last summer, in company with Sir Charles Lyell, and of gathering some of its characteristic shells from among the loose sand, shingle, and pebbles, which are there elevated to this extraordinary height. There is another instance, but not of so striking a character, between Shrewsbury and Bridgnorth, on the Severn, where Mr. George Maw discovered great quantities of marine shells, some of boreal character, in drifts which are elevated a hundred, or a hundred and fifty feet above the Severn. These are instances in our own country which any naturalist may study for himself.

But we have upheavals of a later date than those just instanced, and which have no doubt occurred since the occupation of England by man. Flint weapons have

been found near Bedford, and other localities, which prove that England was inhabited by an ancient people, who lived in ages long remote, and before the country had been upheaved to its present position. These beds are probably correlative in age to the celebrated drifts containing human tools in the Somme valley. Many caves containing human remains, associated with those of extinct animals, have been greatly altered in position, and upheaved since the deposition of the organic remains, while ancient land surfaces have in other parts subsided beneath the sea. Ancient canoes have been found near Glasgow, in upheaved marine silts; and we are informed by Sir Charles Lyell, that "at the time when these ancient vessels were navigating the waters where the city of Glasgow now stands, the whole of the low lands which bordered the present estuary of the Clyde formed the bed of a shallow sea." This emergence is proved to have been gradual and intermittent.

On the east and west coasts of Scotland there are raised beaches of from twenty-five to forty feet in height above high-water mark; and it appears probable that the coast-line in the neighborhood of Edinburgh has changed since the human epoch. At all events, it has altered considerably within a recent geological period.* Mr. Geikie believes that an elevation of other parts of the Scottish coast-line has occurred since the Roman occupation of the Roman stations on the Solway, the Forth, and the Clyde. This presumption is still doubtful, but my own observations and inquiries induce me to believe that Mr. Geikie is right. We have then a good deal of evidence to prove that oscillatory movements have occurred in England, to a very considerable extent, up to a late period; and I believe that such movements should be attributed to a succession of small earthquakes, such as the late shock so generally experienced throughout England, or those shocks which destroyed the cathedral of Lincoln in 1185, and many of the largest churches in England in September, 1275. I say, a succession of *small earthquakes*, for we have no evidence of the overflow of volcanic matter, or of paroxysmal earthquakes, such as those which happen in

* See *Edinburgh and its Neighborhood*, a work by the late Hugh Miller, just published.

volcanic countries, for a very long period.

With regard to the late earthquake, it had every appearance of being one of those sensible vibratory undulations of the earth's surface, referred by Mr. Scrope "to the snap and jar occasioned by a sudden and violent rupture of rock masses at a greater or less depth, and probably the instantaneous injection into the fissures so formed of intumescent molten matter from beneath." It certainly seems only reasonable, when we reflect that the British Islands are on the line of the volcanic belt which affected Portugal when Lisbon and several other cities were nearly destroyed, and which reaches to the Canary Islands, to refer our British earthquakes to the same cause as volcanic eruptions, namely, *pent-up subterranean heat*. We know that subterranean heat exists to an enormous extent in the interior of the earth, and in former ages has melted and erupted masses of fluid rock, and caused subsidences and elevations here in England, and, in all probability, will do so again. Why seek for other and unknown causes? The earthquake of October last was harmless, but it was sufficiently violent in some localities to make us understand that the powers are not extinct, and that volcanic agency is not dead beneath us. A shock of only double the violence would probably have caused some serious catastrophes in the neighborhood of Ross and Abergavenny. The direction of this earthquake appears to have been from south-west to north-east. This is believed by Mr. Mallet to be the line of the Lisbon earthquake; and it was certainly the line of many earthquake movements in former ages. During the earthquake at Lisbon, Loch Lomond rose two or three feet; women washing in the Tay were swept off their legs by a wave; and a great wave rolled into Kinsale. In Carmarthen Bay, about eight hours after the earthquake of October, a large body of water, of a dark-brown color, as if charged with earthy matter, was seen to roll forward in the shape of a cone, and coming in contact with a boat, "the boat was violently pitched about, and the water thrown completely over it."

The roaring noise which accompanied the earthquake is supposed, by the editor of *The Geologist*, to have been "fancied." And the phenomena that occurred are treated so lightly, that it is manifest Londoners heard and felt very little in com-

parison with those who reside in the western counties. The evidence of the Rev. H. C. Key, of Stretton Rectory, near Hereford, with respect to the noise, which he likens to that of "a very heavy and long train rushing furiously through a station," is precisely the evidence that I have received from several other persons who happened to be awake, and who never heard or read of Mr. Key's experiences.

As regards the undulatory motion of this earthquake, and the boat-like rocking which has been described by some persons, I may say that in four instances where I examined the position of their beds, I found that their broadsides lay east and west, or nearly so. In cases where the heads of the beds lay north or south, the swaying motion from side to side does not appear to have been experienced to a similar extent. The localities where the shock was felt most appear to have been along the line of certain rivers in the West of England which run along the track of ancient earth movements. The Golden Valley, in Herefordshire, along the banks of the Dore, was much shaken, as also were the valleys of the Wye, and certain tributaries of that river towards Monmouth and Abergavenny. At Llancilio, the seat of Colonel Clifford, M.P., a fissure was caused in a wall, and some prints just pasted down were split across. Llancilio is not far distant from an example of the effects of ancient earthquakes; for, at Usk, a large dome of Upper Silurian rocks is upcast through the surrounding and overlying Old Red Sandstone of the district. At Ashfield, near Ross, on the Wye, the walls of two unfinished houses were partly thrown down; and at Bishop's Wood, below Ross, a line of former faulting and rending of the earth's crust, a house standing close on the river was so much heaved and rocked that the occupant of a heavy old four-poster bed was nearly thrown out. The following evidence from the Ross neighborhood of the external phenomena attending the shock, is remarkable. I received the information from a friend, who is thoroughly to be depended on. A man rose unusually early, and was engaged in loading a cart of potatoes, which he had promised to deliver before his day's work commenced; when, on a sudden, "he heard a dreadful noise come roaring up," apparently from a wood to the westward, and his cart rocked so violently that he was nearly thrown out of

it. The trees all around him rocked violently to and fro, and the rooks arose cawing from the wood; the small birds also twittered, and took wing with notes of distress. The thunder-like noise appeared to roll off towards the east.

I might give numerous other instances of the effects of the October earthquake in the West of England, but I think enough has been said to prove that it was a very different affair from the London experiences of "three little quivers," and "legs which were asleep and twitched." Here it was a severe shock for Great Britain, and confirms our opinion more and more that the volcanic doctrine is the true one, whatever may be the truth of the existence of a Plutonic nucleus in the interior of the planet. There is no doubt, however, that there is a good deal in the remark, that the variety of sensations, and the degrees of violence, in different localities were owing to the variations of geological conditions, and the medium of solid rock, or

looser strata, which communicated the earth-wave from place to place.

Finally, the question of principal importance is, whether we are to expect a renewal of such a phenomena from time to time, and whether it is possible that volcanic fires and their companions, paroxysmal and violent earthquakes, may again agitate our native land. But this is a question it is impossible to answer. We do not know why the fire of the volcano and the rending of the earthquake should become locally extinct at different geological periods, or why the centers of volcanic eruption should vary; but we know that they have formerly done so, and we do not doubt that they will thus vary again.

The volcano and the earthquake are some of the principal means which the great Creator employs for the construction and the adaptation of the planet on which we live; but *when* their forces are to be employed, or *where*, does not lie at present within the reach of man's philosophy.

From Fraser's Magazine.

"FAR AWAY."

"The land that is very far off."—ISAIAH 33: 17.

Upon the shore
Of Evermore
We sport like children at their play;
And gather shells
Where sinks and swells
The mighty sea from far away.

Upon that beach,
Nor voice nor speech
Doth things intelligible say;
But through our souls
A whisper rolls
That comes to us from far away.

Into our ears
The voice of years
Comes deeper, deeper, day by day;
We stoop to hear,
As it draws near,
Its awfulness from far away.

At what it tells
We drop the shells
We were so full of yesterday,
And pick no more
Upon that shore,
But dream of brighter far away.

And o'er that tide,
Far out and wide,
The yearnings of our souls do stray;
We long to go,
We do not know
Where it may be, but far away.

The mighty deep
Doth slowly creep
Up on the shore where we did play;
The very sand
Where we did stand
A moment since, swept far away.

Our playmates all
Beyond our call
Are passing hence, as we too may;
Unto that shore
Of Evermore,
Beyond the boundless far away.

We'll trust the wave,
And Him to save
Beneath whose feet as marble lay
The rolling deep,
For he can keep
Our souls in that dim far away.

From the London Eclectic.

THE NATURALIST ON THE RIVER AMAZON.*

WE recommend that lady who, when sending to the circulating library, said: "Any thing but travels; they're such a bore," to get Mr. Bates's book forthwith; if she does not change her opinion, the fault will assuredly be hers. We have in these volumes such varied matter, that scarcely any one can fail of finding something to his taste. Is he a naturalist? Here he has the record of how fifteen thousand species (eight thousand of them *new*) were seen, and caught, and labeled, and sent in cases to England. Here, too, the battle of the origin of species is fought over again, and butterflies are pressed into the service, to prove by the gradation in their markings, that one species actually has passed into another. Is he an ethnologist? Mr. Bates gives him many most valuable notes on Indian character and manners, and on the condition of the great half-caste population. Does he like to let his fancy riot in tropical scenery? Here he can walk through forests of trees, averaging almost two hundred feet, and rising nearly a hundred feet clear from the ground without a branch; trees, too, which bear in large cases, or else in jars,† with neatly-fitting capsule, the "Brazil nuts," which we eat without thinking what they grow on. Then he may get down to the water-side, and splash about through a forest of *arums*, twelve or fifteen feet high, (yet the same race as our little English "lords and ladies,") covering the banks and low islands; or, again, he may wander over a marsh, amid the great fan-palms and bananas, showing every shade of green in their broad leaves, while butterflies of gorgeous hues and great size‡ float about in numbers of which we can form no idea, and humming-birds dart in

and out among the long blossoms of the tree-creepers. All this and much more, whether in the utter solitude of the mid-day forest, or amid the "tumult of life," at morning and evening, Mr. Bates saw, and describes in language glowing enough to make many a quiet reader shut his eyes and, throwing himself back in his chair, dream for a few short minutes of vacating his office-stool, and going off to seek his fortunes. Why is there always such a fascination about these countries? We are very steady, practical people now; but we have *in us*, under the crust of hard every-day life, the same spirit of romance, which, when England was younger, urged Raleigh and his followers across the Atlantic; and it only needs a wizard like Mr. Bates, to send scores of quiet well-to-do people along the same road—in *imagination*. Why should people care to hear about Brazil? It is not like Peru, a land of mystery, where one of the world's home-grown civilizations crumbled away under the rough touch of "progress." It has nothing to tell us, except a very common-place story of conquering and unscrupulous Portuguese; of struggles by Jesuit missionaries to keep their native flocks from being killed off with over-toil; of importations of negroes to fill up the void left when the Indian had been *worked out*; of a royal family leaving, under French pressure, a little barren strip of seaboard in Europe, for a magnificent empire across the ocean; and, lastly, of a barbarous and, to a great extent, fruitless "revolt," some thirty years ago. That is the *history of Brazil*: it has all yet to be made; and this is perhaps the chief cause why all connected with the country has such a charm for us. The grand scale of every thing in nature helps, no doubt; but the great point is, that Brazil is really a new land—new, both because *spots* may be found there,

"Where no man is,
Nor hath been since the making of the world;"
and also, because the equal laws for men

* By HENRY WALTER BATES. 2 vols. Murray: London. 1863.

† *Leceythus ollaria* (pot-shaped oil-bottle) one tree is called.

‡ Several kinds six inches across. The great moth, *Erabus striz*, is sometimes over a foot from tip to tip.

of all colors, and the excellent institutions of all kinds, are there on their trial, working out for our learning, the deeply interesting problem of the amalgamation of races. This is the point in which we English fail as colonists; we fill the land, but it is with our own people. We have not yet solved the difficulty (which the "Latin race" are solving in Brazil and elsewhere) of taking the aborigines into ourselves. Ours may be the more successful plan, measured by the amount of barrels of flour, and cheese, and so forth, which we get out of a given piece of ground; but theirs is the truer plan, and (inasmuch as a man is of more value than many cheeses) the more really successful in the end. It is all very well to talk (as the *Times* did talk some fourteen years ago) about the whole world becoming Anglo-Saxon in speech, and pretty nearly so in blood; but it would in such case be a monstrous world after all, and we should be in the sad predicament of having no "inferior race" with whom to compare ourselves, and over whom to crow in triumph. The negro race, at any rate, shows no signs of disappearing, the slave-trade has opened to it a new world, where it has taken permanent root. Strangely enough, there were no aboriginal black men in America; there are, we are told, in Borneo, in Madagascar, in Ceylon, (where they have not yet reached, or have lost, even the simplest form of tribal life,) among the Malays every where—even in New-Zealand; the Greeks, too, have left us the record of them round the eastern end of the Euxine; but in the New World they are not. Man there is of one homogeneous race, whether roaming solitary, or crushed beneath the gigantic exuberance of nature, as in Brazil; or hunting over the western prairies. Language goes for nothing; wanderers would soon forget one another's speech: but Pritchard and Nott alike agree, that the red man, with what Mr. Bates calls "his strange inflexibility of organization," is the same every where. In the cross the white predominates; our author tells us of a French blacksmith who had married a half-caste, and had a daughter a perfect blonde—strange, while her grandmother was a tattooed dark-skin.

Well, whether we care about insects and animals, or tropical forests, or the races of man, we shall find something to

suit us in Mr. Bates. It is a book, above all, for sedentary people, for young men in offices, members of Young Men's Christian Associations and Mutual Improvement Societies; it is the sort of reading to stir within them "the Viking's blood," the spirit of adventure, and it is good that this should be stirred at times, lest we crystallize into hard shapes, under the pressure which is constantly being put on most of us. If you can choose your time for reading it, take an evening when the wind is roaring outside, and the rain weeping against your windows; the contrast with the glow of tropical summers and the "calm well-balanced equilibrium of tropical life" will be all the stronger.

But we must give some account of what Mr. Bates did. In April, 1848, he and Mr. Wallace started on a naturalizing expedition, intending to gather specimens, pack, and send them to dealers in London, and live on the proceeds. They had a notion, too, of solving the question of "the origin of species," while out in Brazil; we shall see by and by what Mr. Bates has to say on this point.

His first point is Parà, a thriving port on the river of the same name; a river, by the way, in marking which our ordinary maps seem at fault, for it is not a branch of the Amazon, but a separate stream, though connected with the grand river by several channels. People who intend to go up the Amazon always enter by the Parà, for the navigation is much easier, and the coast less unhealthy. Parà was in a transition state when Mr. Bates first saw it; the primeval forest came close up to the streets, the place was a perfect "Naturalist's Paradise"—seven hundred species of butterflies being found in one short woodland walk—(there are only thirty-six in all England.) Eleven years after, when he is leaving, he notes the change, the clearings cutting up his "butterfly runs," the dearness of provisions and house-rent, and all the other "signs of progress."

Hence, after an expedition up the Tocantins, a great river which comes up from the south into the Parà, he pushes across to the Amazons. There were no steamers in those days; they grew up during our author's sojourn in Brazil; the difference in traveling is of course immense, the steamer does in eight days what used

to take forty, or even three months in flood-time, in a cuberta or country boat, like that in which Mr. Bates made his way from point to point. They generally rested all night; by day the land-breeze took them slowly up: then the trader often had to land to sell or buy goods, and the naturalist was glad of the opportunity of exploring; besides, they generally lay to at midday, and then, also, the indefatigable Mr. Bates went on shore to see what he could get. The heat was sometimes excessive, when the banks were high and the channel narrow; but in general there was abundance of wind; indeed, many storms are described which were quite sea-like, and which it tasked all the skill and coolness of the Indian pilots to bear up against. Indeed, in these "broad lake-like expanses, where the tide—the throb of the great oceanic pulse—is felt over five hundred miles up," it is no wonder that the surf and swell are as furious as on the ocean itself.

All this voyage Mr. Bates seems healthy enough; the main river, he says, is far from unhealthy, though in places you are in a vapor-bath all the year round; it is the tributaries which are very unhealthy, both for Europeans and for Indians. Diseases, however, out here, seem to return (like extreme seasons with us) in cycles. Pará was for a time such a healthy place that delicate people from the United States used to come there; then, quite suddenly, yellow-fever broke out, and has visited it once again since; and now, after the double decimation, it is healthy again. The coast scenery (we use the word advisedly, seeing that in places the width is very great) is, of course, various; at times, long desolate timber-strewn reaches, with a channel so wide, that the other shore is only visible as a low line of forest. Then the high banks of clay, (pink or yellow,) so destitute of rock or gravel, that "not a pebble is seen for weeks." The width is perhaps greatest where the Madeira (*itself a river of two thousand miles*!) joins the main stream. In some places on the Upper Amazon, the vegetation comes so close to the edge, that they work their way up by pulling from tree to tree. This Upper Amazon, by the way, or Solimões, has a course of two thousand one hundred and thirty miles from Lake Lauricocha, near Lima, to the Rio Negro, where it loses its distinctive name. The whole course of this stream

is through a magnificent wilderness, vegetation incredibly luxuriant, animal and insect life abounding, trees always in fruit and flower. Man has scarcely touched its valley, only a few score acres tilled from the Rio Negro to the Andes.

Along the main stream there are chiefly three kinds of vegetation; if the shore is low, with sand banks and mud, you have abundance of feather-grass, and gigantic reeds, and large fleshy-leaved plants of many kinds; where the banks are moderately high, and cut into by inlets, you have forest containing a large percentage of glorious palms, and all the richness of light-green "tropical vegetation;" where the soft vegetable mould has been quite swept away, you get high sloping red clay banks, with fewer palms, and less variety among the trees (most of them leguminaceous;) but here it is that the monster trees are chiefly found. On the tributaries the trees seem to run smaller, as if they kept proportion with the size of the adjacent stream; the forest-masses, too, have a different look; "the rounded outline, small foliage, and somber green of the woods make a pleasant contrast to the tumultuous piles of rank, glaring, light-green vegetation, and torn, timber-strewn banks, to which we had been so long accustomed in the main river."

The second growth on the clearing where once a coffee or cocoa estate has been, is of very different character from the primitive forest, the trees far less gigantic, and of distinct kinds. These abandoned plantations are unhappily very common. Of course, on the voyage he meets with other strange things besides insects. Antbears (very good eating) and sloths, on shore; and, on the water, frigate-birds, fresh-water dolphins, fish unlimited, (dried fish is the chief diet all up the river; to this, and to the unwholesome mandioca bread, Mr. Bates attributes his impaired health,) and the manatee, (*Vacca marina*), most human of all the seals, which eats like coarse pork. He also finds palm-trees with fruit so full of fatty matter that the vultures eat it greedily. Toucans and trogons (those glorious burnished-green creatures, with long sweeping tails) are the most characteristic birds. The toucan's bill Mr. Bates does not hesitate to describe as an *instance of imperfect adaptation*—it must, indeed, be an inconvenience to the bird, unless (as is hinted) the toucan is a ruminant. The

other inhabitants of the forest are, we are glad to hear, all excellently adapted to their mode of life; the apes, instead of being *anthropoid*, have prehensile tails, with naked palms near the tip, giving an extra hand; the representatives of our barn-door fowls have their toes all on the same plane, instead of one being, spurwise, higher up the leg; the very beetles are suited for "an arboreal existence." By the way, the higher-class apes of the Old World have, like man, only thirty-two teeth, those in the New World (among which are owl-faced apes, and that peculiar kind with a bright scarlet complexion) have thirty-four. The animal which seems most to rouse Mr. Bates's enthusiasm is the "Hyacinthine macaw;" though, in our estimation, the *bird-spider*, (*Mygale avicularia*), five inches across, which a terrible print represents "devouring finches," is a far more noteworthy creature. Then there is the organ-bird, "just like some musical boy singing in the thick-et, then so like a flageolet that we feel sure some one is playing on it, then an abrupt pause, and a number of clicking sounds, like a barrel-organ out of wind and tune." This is the only bird whose note makes any impression on the Indians—generally unimpressible.

Of course there are a few *insect pests*, though (except on the very highest part of the river) the mosquitos are by no means troublesome. The *fire-ant* is about as bad as any—a savage creature, "whose bite is like the prick of a red-hot needle," to guard against which you have to steep hammock ropes, (every body in Brazil sleeps hammock fashion,) chair-legs, and every thing with Copaiba balsam. Fortunately the various insect pests are very local; and those which bite by day disappear instantly at nightfall.

Once or twice Mr. Bates meets a boa: one is described as moving "like a stream of brown fluid flowing quickly along."

Then there are caymans, or alligators, occasionally fatal to bathers. We have a good story of a father who, when a large beast had caught his son by the thigh and carried him off, swam out, overtook it, and, plunging his thumbs into its eyes, compelled it to loose its hold; the boy was saved, though he had an ugly scar all his life long.

Of course, we hear occasionally of the puma, which affords, by the way, a curious instance of false nomenclature; the natives

call him *Sassia-arána* (false-deer) from his dun-color resembling a deer at first sight. This the old zoölogist, Marcgrave, writes *gugua guarana*; whence, dropping the *cedilla*, and hardening the soft *g*, the French have made their "cougonar."

We have already noted the way in which the animals of the country are adapted to their peculiar life; we further read: "Earwigs, mole-crickets, and beetles living in sand, are of a whitish color. Yet of two sister species of beetle, both living on the white beach, one is white and *very swift*, the other copper-colored and slow; but then it does not need the disguise of color, being defended by the putrid smell which it emits when touched. . . . This fact confirms the idea that adaptation of color is with a view to concealment."

There are no hares or rabbits in Brazil: the place of our Rodents is supplied by the *Paça* and *Cutia*, both belonging to a family (*the Subungulati*) which connects the Rodents with the *Pachyderms*, and points to a time when a group existed connecting the two great orders. A fossil *Pachyderm*, the *Toxodon*, *nearly allied to these Rodents*, has been found in America: but neither fossil nor recent is the family found in any other part of the world.

The voyage is slow; as Mr. Bates learns before he leaves Pará, "*paciência*" is in constant requisition in Brazil; it is of no use expecting English energy; the traders often act on the principle, "pleasure first and business after," and waste half-a-day in chatting with an acquaintance, both lying in hammocks sipping *cushúcu*, the spirit made from the *mandioca*.

At last, however, rich in specimens, our naturalist lands at Santarém, a city of twenty-five hundred souls, "the biggest place on the main river from Peru to the Atlantic." The climate here is extremely dry, and seems to suit the English very well; several residents, of many years' standing, looking as ruddy as Suffolk farmers; but the natives are afflicted with leprosy; the place is called *Cidade dos Lazáros*. This fearful disease, caused, Mr. Bates thinks, by atrophy and consequent local decay, is not due to lack of food. Santarém is the only place on the whole line where meat is abundant and cheap—twopence a pound.

His next station is Obydos, where he sees a good deal of Indian and half-caste

life. Thence to the Barra of the Rio Negro, a wretched place, eaten up with officials, and miserably supplied with provisions—their beef is fetched five hundred miles; the butter comes from England; a lean fowl costs seven shillings; an egg twopence-halfpenny. Thence to Ega, where (Mr. Wallace having some time left him, and gone up the Rio Negro) our author fixes himself for some time. His account of his life here is so characteristic, that we shall give it in his own words:

"I generally rose with the sun, when the grassy streets were wet with dew, and walked down to the river to bathe; five or six hours of every morning were spent in collecting in the forest, whose borders lay only five minutes' walk from my house: the hot hours of the afternoon, between three and six o'clock, and the rainy days, were occupied in preparing and ticketing the specimens, making notes, dissecting, and drawing. I frequently had short rambles by water, in a small montaria, with an Indian lad to paddle. The neighborhood yielded me, up to the last day of my residence, an uninterrupted succession of new and curious forms in the different classes of the animal kingdom."

There he was amidst a population whose manners "offered a curious mixture of *naïve* rusticity and formal politeness." They are never impertinently curious. "The Indians and half-castes seemed to think it natural that strangers should collect and send abroad their beautiful butterflies and birds. The butterflies they universally concluded to be wanted as patterns for bright-colored calico-prints." Even educated people, who could understand what a museum is, could not comprehend a man studying science for its own sake: when he told them he was collecting for the "Museo de Londres," and was paid for it, they understood, and respected him accordingly.

A pleasant place Ega must have been: no danger from wild beasts, very little from serpents, none from men, even incivility, to an unoffending stranger, was rare among the natives. We can scarcely wonder that "three Frenchmen and two Italians, coming down one after another from the Andes to the sea, settled here for life, three of them marrying native women." They were a great acquisition to Mr. Bates's limited society, for "the want of the varied excitement of Euro-

pean life" seems to have troubled him most, "growing more intense instead of getting deadened. The contemplation of nature alone is not sufficient to fill the human mind and heart." Fairly healthy withal was Ega. We read: "The pools in the flood-land round keep strangely pure, no foul smell, no traces of conferva, or oil, revealing animal decomposition: nor in the dry season is there any malaria. How elaborate must be the natural processes of self-purification in these teeming waters." Mr. Bates sees great changes at Ega: it rises, during his stay, from being, in 1850, a village dependent on Pará, fourteen hundred miles off, to be in 1852 a city, capital of its own province. A year after this steamers began to run on the Solimões. In 1855, they ran every two months between the Rio Negro and Nauta in Peru. As Mr. Bates remarks: "What a future is in store for the sleepy little tropical village, with its semi-Indian population of twelve hundred souls, lying there amidst perpetual verdure, with soil of endless fertility, even for Brazil, great healthiness, (if you can get proper food,) freedom from insect pests, endless rivers and channels teeming with fish and turtle, while its own river, communicating direct with the Atlantic, widens into a lake where at any season a fleet of steamers might anchor."

The prices of produce are rising: in 1850, says our author, a big turtle could be bought for ninepence; when he left in 1859, one of the same size would cost eight or nine shillings. River-turtle, of great size, over three feet across, are the staple food at Ega. They are described as delightful food, but cloying. Indeed, the one drawback to the place seems the difficulty of obtaining suitable food. Hunger! the mere notion seems ridiculous amid such tropical luxuriance. Yet, in spite of turtle in every shape, of fish unlimited, of occasional manatee, (sea-calf—like very coarse pork, with green fat,) and of glutenless mandioca meal for bread, the hunger for beef was such that whenever a beast out of the large herds, which pastured in the very streets, was killed by accident, (generally poisoned by drinking juice of mandioca root,) the competition for its flesh was immense. Owing to some cause, which Mr. Bates does not explain, an ox is never killed in the regular way. He repeats in the case of these Ega cattle, the remark which he had made of others

in the Lower Amazon, that though fat and sleek, in excellent pastures, the cows never gave milk except when a calf was born, and then only for a few weeks. Bread is only to be had occasionally, at ninepence a pound, made of American flour from Pará. Mr. Bates thinks that his "gradual deterioration of health" was due to his not tasting wheaten bread for two years. A tapir occasionally gave him for some days a most delicious and nourishing fare, and in June and July vast flocks of toucans come into the neighborhood, furnishing abundant food for many weeks.

Such was our author's life at the little city, founded in 1688 by Father Samuel Fritz, a Bohemian Jesuit, who induced several Indian tribes to settle there. About half are pure blood Indians still. At the assizes, Mr. Bates saw the novel (and to an "American," whether north or south, inexpressibly disgusting) sight of negro, white, half-caste, and Indian, sitting gravely side by side on the jury-bench.*

It is the same all the country through. "In Pará, every householder has a vote. Jurymen are selected without regard to race or color: white merchant, negro husbandman, Mameluco, Mulatto, and Indian, all are called on to serve. The constitution of government in Brazil seems to combine happily the principles of local self-government and centralization, and only requires a proper degree of virtue and intelligence in the people to lead the nation to great prosperity." The plan works well in one respect. "A gentle courtesy rules amongst all classes and colors. You may see a splendidly-dressed colonel, from the president's palace, walk up to a mulatto and politely ask for a light from his cigar."

Nor is education, such as it is, at all confined to one color: at Baiao a young Mameluco, an Escrivao, or public clerk, showed me his library—strange, to find a well-thumbed Terence, Virgil, Livy, etc., in a mud-plastered, palm-thatched hut by the Tocantins.

Our author devotes nearly a chapter to Indian life and characteristics, as noted during his stay in Ega. The strangest

thing about these Indians, is the extreme diversity of language—tribes manifestly of the same stock have scarcely a word in common. Indeed Mr. Bates thinks that all the many tribes are of the same race, in spite of the friendly open manners of some, and the suspicious hostility of others. We often speak of the savage as if he deserved some severe reproof for being what he is—a degenerate creature—but how could it be otherwise with these Brazilians, entering the country in small detached bodies, isolated from one another by enormous forests, crushed by the vastness and overpowering luxuriance of nature around them, how could they fail of becoming what they are? The rapid degeneracy of the mutineers of the "Bounty" may help us to form an idea of what scattered little English communities would have become under like circumstances.

This isolation Mr. Bates believes to be the reason for the strange inflexibility of the Indian organization, both bodily and mental; and which, while it is the cause of many of the redskin's virtues, on which (in the case of the Northern Indians) novelists and poets have delighted to descant, is also a lamentable hindrance to the social development of the race. They are dying out, these Indians of Brazil: their families are always very small; their inability to resist climate is as great as that of the whites. The little slaves, captured in tribe-wars, brought in (contrary to Brazilian law) for sale at Ega, die in large numbers of fever and swollen liver. Another mysterious plague is the "defluxo," a slow fever accompanied by the symptoms of a common cold, ending in consumption; this always appears when a village is visited by people from the civilized settlements; "the first question the poor patient Indians now put to an advancing canoe is: 'Do you bring defluxo?'" But though, like their congeners, the Indian tribes in the Northern Continent seem doomed to pass away, the race of half-breeds (mamelucos) is much more numerous and important than even in Lower Canada. It seems the mission of the "Latin race" to amalgamate with these aborigines whom the Teuton steadily rejects. M. Michelet, in his last work, *The History of the Regency*, contrasts very forcibly the English colonization, ending always in the total extinction of the natives, with that of such Frenchmen

* Some of our readers may remember how Mrs. Seacole (of Crimean fame) tells, with pardonable triumph, (she was a half-caste,) of a negro judge in Guatemala, who pronounced sentence on some lawless, bullying "American."

as Cavelier and De Casteins,* who aimed at mixing the races.

These Brazil Indians are by no means mere savages; they brought various plants with them when they emigrated into the country. The three kinds of mandioca, the American banana; and, above all, the "Peach palm," which, growing to the height of fifty or sixty feet, bears a dry mealy fruit with a flavor "like a mixture of chestnuts and cheese," which is said to contain more nutriment than fish or seacalf: indeed, allowance being made for the country, they are not such bad agriculturists for aborigines, their weakness being the want of domestic animals.

Wonderful marksmen these Indians still are. It is well for us that the New Zealanders are not like them in this respect. Their guns are very so-so, mere "traders' guns," things like those our Birmingham people used to sell to the Kaffirs: so they are mostly reserved for the numerous feasts, religious and others, at which a considerable amount of powder is fired away. The serious work is done to a great extent with the *blowpipe*—far more effectual than the musket: a man takes his stand below, say, a colony of eatable monkeys, covers his quadruman—puffs the light reed-arrow, dipped in poison-tree juice, up into the tall tree, and down drops monkey number one, to be speedily followed by monkey number two, and so on, in succession, until enough to fill his game-bag lie at Joaquim's feet: the monkey population, who would start off and swing away for miles at the report of a gun, feeding meanwhile, and chatting away quite unconcerned, and really thinking of their dropping relatives what some Greek in Homer pretends to think of the Trojans:

"What skillful divers are our Phrygian foes."

The blowpipe is very hard to manage—just try to steady a stick even of light elder-wood, some eight or more feet long, so as to have a chance of bringing the end of it, even for a second, in a right line with a rabbit sixty paces off, and you will have more respect for the Indians than you have hitherto had.

Christians, according to Mr. Bates, these people scarcely are. Some exceptions he gives; some priests, for instance, seem-

ingly well-trained, and with their heart really in their work—men who (despite their red skins) win reverence from every one: but, in general, the Indians do not seem to have got much from their Jesuit teachers but the externals, and with these a great deal of old native "mumbo jumbo," as well as much "missionary adaptation," is mingled. The processions are still headed by an extraordinary fetish, made up of ribbons, and flowers, and bits of looking-glass; this is an heirloom from the days when the padre *persuaded* the people to go to church by walking thither himself with a mirror in his hand. The simple native saw his own face, was at once taken captive by the sight, followed, learnt the way, and, we would fain hope, went on going, not because of the wonderful glass, but because he found it

"Like a little heaven below."

The native talent for mimicking and masquerading is immense: they put anybody into their processions. Mr. Bates is taken off in one of them to the life, spectacles, butterfly-net, and all. In the frontispiece to Vol. II. you see a whole set of these monstrosities, giants of every kind, vast masks of cloth stretched on bamboo-frames and moved (as our own old mummers managed it) by men inside. Hence we are prepared to find the church festivals "well got up." On Good Friday, for instance, two processions, one headed by the image of the Saviour bearing the cross, the other by that of Our Lady, start from opposite ends of the town, and meet in the middle of the chief church, when a strange scene of weeping commences. All the events of the day are represented, the sighs of the *Maries* being uttered by certain lusty professionals who are stowed away for that purpose in the vestry. We must not ask for religion among the red men while the whites are such as they are: indeed, when Mr. Bates says, "though as to notions about a Supreme Being their minds are a blank, they are still free from degrading superstition," we feel that this is much more than can be said of the Portuguese. The ceremonies occasion great devoutness among negroes and Brazilian ladies, and some Portuguese; Indians look on at the solemn portions rather stolidly as if they were all nonsense, and they take their part in the show as if it were but a mere stage play, in which the priest is chief actor.

* A Béarnais baron, who married into, and became Chief of the Abenakis.

In steadiness and saving habits, the Peruvians (Cucámas) are much in advance of the rest. Mr. Bates goes up the Solimóens, or Upper Amazon, with a boat's crew of these Indians. He testifies to their industry—they were tailoring all the time that the navigation did not need their attention—and to their wonderful good behavior, and yet their strange apathy. It thunders fearfully—they are caught in one of those wild river-storms, of which Mr. Bates experiences several, when the vast body of water dashes with a sea-swell against its banks, bringing down in some places vast masses of earth with all the trees growing on them—their boat is saved, for the Indians are wonderful pilots; but the only notice they take of the thunder-claps that burst amid the deluge of rain, is for the wag of the party to chuckle out, "My old uncle's hunting again!" A hard life theirs: the youngest of the party goes ashore, stays longer than was agreed, they start without him, and he has to pursue the montaria; he is all day at it—killing work it must have been—but when he gets up with them and comes on deck, he only grins and is grinned at all round, as if such treatment were a matter of course. Indians get very few *ideas* from mixing in civilized scenes; beyond what concerns their little trading speculations their minds are a blank—showing none of the nobleness of the ideal savage. The most "improved" of them are very commonplace, uninteresting companions. We can not help thinking that Mr. Bates is, at times, hard on them for their "stolidity:"* he clearly expected "the glorious savage in his native wilds." A good deal of the seeming stupidity may be due to the want of sufficient power to communicate freely. Your town-bred man is sure to find even a countryman of his own nation a stupid fellow, because he does not understand him at first, and has not patience to wait. Of course, the different tribes differ a great deal: there are the debased Múras, eaters of dried fish, who have forgotten the use of the mandioca. Their degeneracy is probably of more recent date than the Portuguese occupation of the country: the unscrupulousness of Europeans anxious to

get slaves, or to collect native produce, has not failed to egg on the ferocity of tribe against tribe.

As you near Peru you would expect to find higher degrees of native civilization, and yet it is on the Tocantins, the furthest limit of his journeyings, he meets another tribe of Indians who, like the Múras, resist all approach to civilization. These, the Carisháuas, have none of the symbolic masked dances of the other tribes; at their few festivals they show their degeneracy by not drinking to intoxication, and by getting the whole affair over in a day, instead of keeping it up for several days and nights. They live mostly on smaller creatures. "If they kill a toucan it is an important event; the bird is made to serve as a meal for over a score of people. The women are not allowed to taste the meat, but have to content themselves with sopping pieces of mandioca cake dipped in the broth."

In this wretched country up the Tocantins, four hundred miles of which is totally uninhabited, society seems reduced to its primitive elements. There are two nations of Indians, divided into hordes, not living in villages but scattered in families over the country, and connected by no tie but a common name, and the tradition of general enmity towards the hordes of the other nation.

As we have said, until lately very little but evil has resulted to these poor natives from the influx of whites: even the Jesuits, powerful as we suppose them to be, were no match for Portuguese greed, and had, after a long struggle, to give up their efforts for the good of the Indians, and finally to leave the country. Mr. Bates passes the remains of some of their *very ugly* "mission villages," built in formal streets, instead of in the pleasant native style, scattered among trees.

As to lay agency, the following instances will show to what extent European traders deserve their title of "pioneers of civilization." Fonte Boa was an important place; many Indians, of industrious tribes, having settled there, their industry being directed by a few whites, humane men as well as enterprising traders. The neighborhood was well cleared, mosquitos were disappearing, the Indians were orderly and happy. Then came some low-class Brazilian and Portuguese traders, who in their eagerness for business taught the easy-going Indians all kinds of trickery

* For instance, it seems to us very unfair to attribute the kindly mutual helpfulness and strict honesty of the Peruvian boatmen to "absence of eager selfishness in small matters."

and immorality, enticed men and women away from their old employers, and so broke up the large establishments, and drove away the capitalists. The place was ruined. Yet such is the gentleness of the half-caste nature, that here, one hundred and fifty miles from any priest or school-master, deeds of crime and violence are very rare, and the only man who owned a large boat trading down to Pará exercised, as sub-delegado of police, a patriarchal authority. He was a man, too, of some mental inquisitiveness withal; witness his giving our author a boat-load of turtles, in gratitude for a few prints from the *Illustrated News*.

The most pleasant fact in regard to races is the position of the negroes and mulattos throughout the country. Mr. Bates says: "Self-respect and independence I found to be by no means rare qualities among the free negroes. I scolded my man for being late with breakfast. He resented the scolding, not in an insolent way, but in a quiet respectable manner, telling me how the thing had occurred; that I must not expect to find English regularity in Brazil, but should need plenty of 'paciencia.' This spirit of self-respect is attributable partly to the lenient treatment which slaves have generally received from their masters in this part, and partly to the almost total absence of prejudice against colored people among the inhabitants. This is a very happy state of things, tending to draw together all races and classes of the population." At St. Paulo, where the few whites (including the wicked priest) set a vile example, the only companionable people were the sub-delegado, an upright, open-hearted negro, and the negro tailor, a young man who had been well brought up by his godfather. It is touching to read of his coming to spend his evenings in calm converse with Mr. Bates, giving a peculiar knock at the shutters, which were closed to keep out drunken neighbors. The name of Englishman is enough to secure the respect and affection of negroes all through Brazil. These negroes struck our author as having far more religious feeling than the Indians. They have built a fine church at Pará by working overtime; the materials were all bought out of their savings, and carried on their heads to the spot. They and the old Brazilians vie with the Portuguese immigrants in religious zeal.

A very pleasing account is given else-

where of the way in which the negroes at Caripi kept Christmas; they had no priest, an old white-headed negro led off the Litany; gravity and earnestness marked the whole proceedings.

Many of them, too, are (unlike Mrs. Trollope's West Indian nigger) very hard-working and thrifty; one old negro lady and her blacksmith son had saved enough to buy a great deal of house property in Pará.

There is a good deal of trading activity along the Amazon and its tributaries. We had no idea, till we read Mr. Bates, that india-rubber is such an important article of commerce; it makes more than a third of the total exports from Pará, and has reached the value of one hundred and thirty thousand pounds. Then copaiba, and sarsaparilla, and other drugs, are collected from the Indians, while cacao (why should cocoa be always so spelt in books?) is pretty extensively grown, and sugar—though many of the mills, ruined in the revolt of 1835, have not been rebuilt. Tobacco also, and oil, and salt fish, which is the universal staple, help out the list of items. The oil is made, by a most wasteful process, from turtles' eggs. Mr. Bates thinks the vultures used to destroy more than men do now: but old Indians told him the river used to be full of turtles. These—and rude Indian pottery, and the wonderful feather scepters, which they make and pack in bamboo cases, selling them, as they also do skins of rare birds or beasts, since the rage for "collecting" began—form the chief exports. Flour is imported from the States; butter from England.

And now a word or two on Mr. Bates's illustrations of the origin of species. He thinks he has ascertained that one species of butterfly, of genus *Heliconius*, passes through various intermediate forms into another. That is all; though it is introduced grandly enough as the "*manufacture of new species*."

But Mrs. Pardiggle is inquiring what this word "species" means. Distinct species, madam, are those which, when crossed, produce a *hybrid*, a creature incapable of reproducing its species; whilst from the crossing of "varieties" the results are *mongrels*, which will breed on together apparently *ad libitum*. The different breeds of sheep are mongrels; a mule is a hybrid. Of course, here the distinction is clear enough to any one; but we can

not help thinking that the difference between hybrid and mongrel butterflies is not sufficiently ascertained to enable us to build a theory upon it. After all, the question is surely not worth a quarter of the noise that is made about it. There are some people who think we must give up the Old and New Testament, and all the Gospel promises, if it is shown that species are not invariable, that two of them will breed together and produce a fertile progeny. We do not think the establishment of fifty, or five hundred such cases, would in any way sap the foundations of our faith. Why, from one point of view Mr. Darwin's theory is even more orthodox than the other; it bids us believe, not in a soulless world, going on by immutable law, in which all things continue as at the beginning; it tells us that the Spirit, which at first created all things, still moves and works, even to the bringing forth of new forms after his good pleasure. Of course, if Mr. Darwin or any one else tells us that it is the creature itself which, by dint of some aspiration persisted in through ages of time, *shapes itself after a new model*, why, we part company with him at once; but we are not startled to hear the *facts* of which he asserts the existence, because they tell us of a living God who (as of old) letteth his breath go forth, and reneweth the face of the earth.

Well, we must bid Mr. Bates farewell. He is one of the very few writers who go beyond the expectation we have formed of them. He is not first in the field. Mr. Wallace's book has been for some time before the public, and as early as 1819, Von Martius and Spix were in the coun-

try, (those Germans do every thing,) though they did not publish till 1831. But no one will say his work is wanting in freshness. His details of the free life in the greenwood are doubly delightful to us "in cities pent." We go with him into a land which (as we said) has its history to make; we feel somewhat as the old Greeks must have felt, when, through the wonder-glass of Herodotus, they got glimpses of wide continents of which they barely knew the names. But Mr. Bates is a Theophrastus, full of minute research as well as of breadth of scope. By the way, had they "collections" in those days? or did the early naturalists content themselves with clumsy word-painting of the thing they would describe?

The country of which Mr. Bates writes has, to all appearance, a wonderful future before it. The laws are excellent; all that is needed is honesty and energy in carrying them out. We do hope the Brazilians may have a fair chance; they are solving on the widest scale the interesting question of mixed races. They want a trifle more Caucasian blood; we should not be at all sorry to see them get more from these islands—to see the tide of Irish emigration which (steadily shunning Canada) sets always towards the States, drop yet further to the southward. At any rate, we trust that Brazil may be able to move on *peacefully* in the career of improvement; that it may be spared the trials which poor unhappy Mexico has had to undergo, first from its restless neighbors of the Great Republic, and now from the occupation of French troops, for a cause considered insufficient by Spain and England for a *casus belli*.

BENJAMIN CONSTANT AND MADAME RECAMIER.—An application was a few days since made to the President of the Civil Tribunal sitting in chambers for a judge's order to prevent the publication of certain confidential letters written by the celebrated Benjamin Constant to his friend Madame Recamier. In December, 1850, the Court of Paris gave a judgment forbidding the publication of these letters by Madame Louise Colet, who had obtained possession of the original manuscripts. Since then, however, several of the letters have appeared in different publications, and Madame Colet, thinking the prohibi-

tion no longer valid, recently determined to publish the whole of them. They were accordingly advertised as about to appear, but the representatives of Benjamin Constant immediately gave notice to M. Dentu, the bookseller, that they intended to oppose the publication, and applied for the present order. After hearing counsel, the president granted an order that all the copies of the work should at once be given up to a person named by himself, and remain in his possession until the right to publish them should be decided in due course of law.—*Galignani*.

From the London Eclectic.

THE UNITY OF THE POPULAR TALE.*

AMONG the modern "ologies" the science of *storyology* is likely to be regarded by many readers with especial favor as one of the most interesting, while by scholars its great importance has been for some time perceived. The ethnological value of popular tales and ancient traditions can not very well be over estimated—they bring an ethnic element to the study of the unity or variety of human races, not only of a peculiarly interesting but of a most valuable character. Contributions to the study we have in abundance, but they lie scattered over innumerable volumes. Thousands of books of travel might be explored, and the task, which in the nature of things would have to be a self-imposed labor of love, would, we believe, furnish from every quarter of the globe, and from all varieties of wild people, pastoral and nomadic, agricultural or predatory; from South Sea Isles and North-American wigwams, from Calmuc steppes and German forests, from the depths of the Amoor and the Chatits of the Himalayas, an amount of material most suggestive to the thoughtful inquirer into the pathways along which the various races have traveled to their present development. In national songs, in riddles, proverbs, and popular tales, uttered and chanted by lonely fires in the bush, in dark huts and solitary farms, in the waste of mountains and moors, a people's ancestry, history, and character are reflected in the clearest manner. Every way, one of the most important contributions to this

department of literature is the work of Mr. Campbell. So far as our poor scholarship in the matter enables us to judge, his four handsome volumes seem to be prepared in a spirit of scrupulous and scholarly integrity, and contain every evidence of remarkable ability and industry: if any argument were needed, then they appear to furnish another most impregnable argument for the Eastern origin of the Celtic nations, and the relation, even the intimate relation, subsisting between the Indo-Germanic and the Celtic peoples.

Stories like these, compared again with the varieties in the volumes of Mr. Thorpe, suggest the question whether they all flow down from one common ancestry, recited in varying circumstances from age to age, or whether they are an illustration of the synonymousness of human intelligence in the order of its development. Is it so that the mind of man in its pathway to perfect freedom, when beneath the charm of its own volitions, is able to create novels, fictions, tragedies, comedies, and poems in multitudinous variety—and in its forming epoch when it commences the shaping its ideas in the similitudes of corresponding action, and passion pursues the same course? It does seem so, not only that the passion for story-uttering or story-hearing is universal in all nations, among all peoples, but whilst each nation has its own, the varieties of popular story resemble each other, especially in their most primitive forms, and meet as much as all the races meet in that one comprehensive being we call Man. Homer, Herodotus, Æsop, Grimm, and Gammer Grethel are not only wanted by all primitive communities, but there is considerable likeness, too, in their ethnic relatives. An antiquarian like Mr. Campbell discovers this, and turns it to admirable purpose. He sees that as the flotsome and jetsome are constantly drifting northwards and eastwards, yet finding a resting-place on some western shore, so the popular tale is the like mental *débris* floating down from

* *Curiosities of Indo-European Tradition, and Folk Lore.* By WALLIS K. KELLY. Chapman & Hall.

Popular Tales of the West Highlands, orally collected, with a Translation. By J. F. CAMPBELL. 4 vols. Edmonston & Douglas.

Northern Mythology. Compiled from Original and other Sources. By BENJAMIN THORPE, Member of the Royal Academy of Sciences at Munich. 3 vols. Edward Lumley.

The Myth of Hia Watha, and other Oral Legends, Mythologic and Allegoric, of the North-American Indians. By HENRY R. SCHOOLCRAFT, LL.D. Philadelphia: Lippincott.

some central tribe it may be in Central Asia, appearing with varieties of attrition or some slight circumstantial cohesion in Brittany, Scandinavia, Ireland, the West of Scotland, then by some traveler identified with some similar findings in Ceylon or Japan. But for some such common origin and foundation, it would be strange indeed to find the romances of boatmen and fishermen inhabiting small islands filled with incidents which seem to belong to a wild, continental, horse-riding tribe. We fear that in some regions the possibility for the collection of such primeval traditions is dying out. Books and newspapers, pens, ink, and paper are sad foes to the faculty of memory. Plato somewhere implies in words, the exactness of which has escaped us, that the veneration of letters is the decay of memory. Mr. Campbell has collected his vast stores from old men and old women who held them only in their memory. "In our age," he well says, "tradition is out and books are in;" railways and tourists too are doing their accustomed work in driving out the belief in the supernatural. We must quote his description of one of the old story-tellers of the Western Highlands:

"He told me nine stories, and, like all the others, declared that there was no man in the islands who knew them so well. 'He could not say how many he knew,' he seemed to know versions of nearly every thing I had got; and he told me plainly that my versions were good for nothing. 'Huch! Thou hast not got them right at all.' 'They came into his mind,' he said, 'sometimes at night when he could not sleep—old tales that he had not heard for threescore years.'

"He had the manner of a practiced narrator, and it is quite evident that he is one; he chuckled at the interesting parts, and laid his withered finger on my knee as he gave out the terrible bits with due solemnity. A small boy in a kilt, with large round glittering eyes, was standing mute at his knee, gazing at his wrinkled face, and devouring every word. The boy's mother first boiled and then mashed potatoes; and his father, a well-grown man in tartan breeks, ate them. Ducks and ducklings, a cat and a kitten, some hens and a baby, all tumbled about on the clay floor together, and expressed their delight at the savory prospect, each in his own fashion; and three wayfarers dropped in and listened for a spell, and passed their remarks till the ford was shallow. The light came streaming down the chimney, and through a single pane of glass, lighting up a track in the blue mist of the peat smoke; and fell on the white hair

and brown withered face of the old man, as he sat on a low stool with his feet to the fire; and the rest of the dwelling, with all its plenishing of boxes and box-beds, dishes and dresser, and gear of all sorts, faded away through shades of deepening brown, to the black darkness of the smoked roof and the 'peat corner.' There we sat, and smoked and talked for hours, till the tide ebbed; and then I crossed the ford by wading up to the waist, and dried my clothes in the wind in Benbecula."

It will be very curious to those unaccustomed to the study of these things, to find the adventures of the good Haroun-al-Raschid in these Western Isles; old crones and old men reciting Gaelic versions of "Aladdin and his Wonderful Lamp." Some of the stories seem to approach the "Tales of the Duchess D'Aunoy;" others, a greater number, more closely resemble (and in this they are like many we could quote from the old Indian Forests) the charming shadow-pictures of Hans Andersen; the luxurious and dangerous introspection, the dramatic ways and moods of souls in peril from their sins, are unknown. The wanderings and lucubrations of Mr. Pickwick and his illustrious man Friday, Sam Weller; the likenesses to Waverley, or the "Mysteries of London," are alike unknown. On the contrary, while we have no gorgeous palaces nor flying gryphons in the Western Isles, kings and queens are a remarkably common character; and Emperors of Germany and Kings of France seem to be as easily got at as the tooth-pick of Prester John by another famous wizard. All these primeval peoples have a frequent, pleasant, and even humorous way of putting things: an old smith upon his wanderings, lying down to rest, is said to "*put the world under his head.*" And when a girl wished her lover safely from the power of a giant, he replied cheerfully, "*two shares of fear on him, and the smallest share on me.*"

Strength and shrewdness seem to be the two genii most usually worshiped by these ancient story-tellers. A most humorous presentation of the foolishness of folly makes a frequent appearance; the frequent selling of a something valueless as a source of riches is the foundation of many a story, but finds its best illustration in these volumes in the story of the *Shifty Lad*, which is only, in a more primeval form, the story (now we presume familiar to all English readers) of *Master*

Tylwyth Owlglass; and Mr. Campbell finds some incidents like it in the story of Rampsintus told to Herodotus, far more than two thousand years since, and it is renewed in the Norse story of the "Master Thief." Sometimes we find the likenesses of little stories which crop up as anecdotes in conversation, meeting us both in Icelandic tales and Sanscrit traditions. Here is one; Mr. Campbell mentions its Scandinavian and Italian relations, but we believe it is in the Sanscrit *Hitopadeza* too:

"A sailor who had got his money, and who knew that he would spend it all, went to visit his friends. On his way he paid double, and generously, for his board and lodging, and bargained that he should take off a certain old hat as payment on his way back.

"A Jew accompanied him on his return, and seeing the effect of the hat, begged for it, offered for it, and finally, bought it for a large sum. Then he tried it, got cudgelled by the innkeepers, and cursed the clever tar that had outwitted him.

"Here, then, is a story known in the Highlands for many years, with incidents common to Gaelic, Norse, English, German, and some African tongue, and with a peculiar character of its own which distinguishes from all others. I am indebted to the author of *Norse Tales* for a loan of the rare book mentioned in the following reference, which may throw some light on the story and its history:

"In *Le Piacevole Notte di Straparola*, 1567, the story is told of a priest and three rogues who outwit him, and whom he outwits in return.

"First, they persuade him that a mule which he has bought is an ass, and get it; which incident is in another Gaelic story in another shape. Then he sells them a bargain in the shape of a goat, which is good for nothing.

"Then he pretends to kill his housekeeper by sticking a knife into a bladder filled with blood, and brings her alive again with something which he sells to them for two hundred florins of gold, and they kill their three wives in earnest.

"They are enraged, catch the priest, and put him into a sack, intending to drown him in a river. They set him down, and a shepherd comes, who hears a lamentable voice in a sack saying, 'Me la vogliono pur dare, e io non la voglio'—They wish to give her to me, and I don't want her. The priest explains that the lord of that city wants to marry him to his daughter, and by that bait (not the bait of riches) entices the shepherd into the sack. The shepherd is drowned. The priest takes the sheep, and the rogues, when they find the priest with the sheep, beg to be put into three sacks. They get in, are carried to the river by three 'faccioni,' and disposed of; and par-

Scarpacifico, rich in money and flocks, returned home and lived pleasantly, etc.

"From what process this story got from Italian into Gaelic, or who first invented it, seems worth inquiry. One thing is clear: the Italian version and the four Gaelic versions now given resemble each other very closely."

The story of the "Inheritance" is very characteristic, and finds the likenesses to which we have referred:

"There was once a farmer, and he was well off. He had three sons. When he was on the bed of death he called them to him, and he said: 'My sons, I am going to leave you: let there be no disputing when I am gone. In a certain drawer, in a dresser in the inner chamber, you will find a sum of gold; divide it fairly and honestly amongst you, work the farm, and live together as you have done with me;' and shortly after the old man went away. The sons buried him; and when all was over, they went to the drawer, and when they drew it out there was nothing in it.

"They stood for a while without speaking a word. Then the youngest spoke, and he said: 'There is no knowing if there ever was any money at all!' The second said: 'There was money surely, wherever it is now;' and the eldest said: 'Our father never told a lie. There was money certainly, though I can not understand the matter.' 'Come,' said the eldest, 'let us go to such an old man: he was our father's friend; he knew him well; he was at school with him; and no man knew so much of his affairs. Let us go to consult him.'

"So the brothers went to the house of the old man, and they told him all that had happened. 'Stay with me,' said the old man, 'and I will think over this matter. I can not understand it; but, as you know, your father and I were very great with each other. When he had children I had sponsorship, and when I had children he had *gostje*. I know he never told a lie.' And he kept them there, and he gave them meat and drink for ten days.

"Then he sent for the three young lads, and he made them sit down beside him, and he said:

"There was once a young lad, and he was poor; and he took love for the daughter of a rich neighbor, and she took love for him; but because he was so poor there could be no wedding. So at last they pledged themselves to each other, and the young man went away, and stayed in his own house. After a time there came another suitor, and because he was well off, the girl's father made her promise to marry him, and after a time they were married. But when the bridegroom came to her, he found her weeping and bewailing; and he said: 'What ails thee?' The bride would say nothing for a long time; but at last she told him all about it, and how she was pledged to

another man. "Dress thyself," said the man, "and follow me." So she dressed herself in the wedding clothes, and he took the horse, and put her behind him, and he rode to the house of the other man, and when he got there, he struck in the door, and called out: "Is there a man within?" and when the other answered he left the bride there within the door, and he said nothing, but he returned home. Then the man got up, and got a light, and who was there but the bride in her wedding dress.

"What brought thee here?" said he. "Such a man," said the bride. "I was married to him to-day, and when I told him of the promise we had made, he brought me here himself and left me."

"Sit thou there," said the man; "art thou not married?" So he took the horse, and he rode to the priest, and he brought him to the house, and before the priest he loosed the woman from the pledge she had given, and he gave her a line of writing that she was free, and he set her on the horse, and said: "Now return to thy husband."

"So the bride rode away in the darkness in her wedding dress. She had not gone far when she came to a thick wood where three robbers stopped and seized her. "Aha!" said one, "we have waited long, and we have got nothing, but now we have got the bride herself." "Oh," said she, "let me go: let me go to my husband; the man that I was pledged to has let me go. Here are ten pounds in gold—take them, and let me go on my journey." And so she begged and prayed for a long time, and told what had happened to her. At last one of the robbers, who was of a better nature than the rest, said: "Come, as the others have done this, I will take you home myself." "Take thou the money," said she. "I will not take a penny," said the robber; but the other two said: "Give us the money," and they took the ten pounds. The woman rode home, and the robbers left her at her husband's door, and she went in, and showed him the line—the writing that the other had given her before the priest, and they were well pleased.

"Now," said the old man, "which of all these do you think did best?" So the eldest son said: "I think the man that sent the woman to him to whom she was pledged, was the honest, generous man: he did well." The second said: "Yes, but the man to whom she was pledged did still better, when he sent her to her husband." "Then," said the youngest, "I don't know myself; but perhaps the wisest of all were the robbers who got the money." Then the old man rose up, and he said: "Thou hast thy father's gold and silver. I have kept you here for ten days; I have watched you well. I know your father never told a lie, and thou hast stolen the money." And so the youngest son had to confess the fact, and the money was got and divided."

Our readers will perceive that a wide knowledge of books is needed to find the

manifold cousinships of such tales; but in this we have quoted, the readers of Boccaccio will recognize the likeness; and, as has been well said, a skillful modern novelist would doctor such a story as this, nursing it into a three-volume book. Trolles and giants we need not say abound in these traditions. Rip van Winkle has been anticipated a hundred times; here is one, an old Danish tradition:

"THE AGED BRIDE.

"At a marriage at Nørre-Brøby near Odense, the bride during a dance left the apartment and walked without reflection towards a mount in the adjacent field, where at the same time there were dancing and merriment among the Elf-folk. On reaching the mount, she saw that it was standing on red pillars, and at the same moment an Elf came and presented to her a cup of wine. She took the cup, and having emptied it, suffered herself to join in a dance. When the dance was ended she bethought herself of her husband and hastened home. Here it appeared to her that every thing in and about the place was changed, and on entering the village, she recognized neither house nor farm, and heard nothing of the noisy mirth of the wedding. At length she found herself standing before her husband's dwelling, but on entering saw no one whom she knew, and no one who knew her. One old woman only, on hearing the bride's lamentation, exclaimed: 'Is it then you, who a hundred years ago disappeared at my grandfather's brother's wedding?' At these words the aged bride fell down and instantly expired."

Some of the best known of the stories among us have their analogies in regions which seem farthest removed from us. There is an instinctive morality, which may be found, not only in those parabolic forms which have evidently emanated from a reasoning and thoughtful, and perhaps, Christian people, but from the antiquities of Chinese morality. Through how many variations has the following Chinese parable on hospitality passed; for it is well known in many forms to us. It was related to the distinguished traveler Haxthausen by his wonderful servant Peter Neu, a marvel of a linguist, and he heard it in one of the streets of Persia, where, as in China and Japan, Mr. Oliphant tells us, groups are commonly seen listening to professional story-tellers and tradition-reciters in the streets:

"Fohi, in the course of his wanderings, coming to a village, knocked at the door of a rich woman, and begged permission to enter.

'What!' said she, 'do you think I receive into my house every roving vagabond? no indeed, it would be unbefitting a respectable woman—go your way!' Then he went to the cottage of a poor woman, who at once kindly begged him to enter. She set before him the only food she had, a little goat's milk, broke a piece of bread into it, and said: 'May Pöhi bless it, that we may both have enough!' She then prepared for him a couch of straw; and when he fell asleep, perceiving that he had no shirt, she sat up all night and made him one out of some linen she had made by her own hard labor: in the morning she brought it to him, begging he would not despise her poor gift. After breakfast she accompanied him a little way; and at parting Pöhi said: 'May the first work you undertake last until evening!' When she got home, she began to measure her linen, to see how much was left; and she went on measuring, and did not come to the end of it until the evening, when her house and yard were full of linen; in short, she did not know what to do with her wealth. Her rich neighbor, seeing this, was sorely vexed, and resolved that such good fortune should not escape her again. After some months the traveler came once more to the village; she went to meet him, pressed him to go to her house, treated him with the best food she had, and in the morning brought him a shirt of fine linen, which she had made some time before; but all night she kept a candle burning in her room that the stranger if he awoke might suppose she was making his shirt. After breakfast, she accompanied him out of the village; and when they parted he said: 'May the first work you undertake last till evening!' She went her way home, thinking the whole time of her linen, and anticipating its wonderful increase; but just then her cows began to low. 'Before I measure my linen,' said she, 'I will quickly fetch the cows some water.' But when she poured the water into the trough, her pail never emptied; she went on pouring, the stream increased, and soon her house and yard were under water; the neighbors complained that every thing was ruined; the cattle were drowned, and with difficulty she saved her life, for the water never ceased flowing until the setting of the sun."

Baron Haxthausen relates this in a very interesting chapter of his work, on *Transcaucasia*, reciting a number of Armenian legends and tales.

To trace the analogues of even a hundredth part of these stories would be not the work of a brief article in a review, but of volumes—our object rather is to suggest. Thus we find the story of "Jack and the Bean-stalk" in Polynesia; a hero goes up to the sky on a ladder made of a plant and brings thence three precious gifts, in much the same way as that in

which Jack does; but this is one of those stories which seem to be common to all the world; but it has its distinct character in the Highlands. Mr. Campbell gives several versions of it. Cinderella also, is another of these common stories existing in many varieties. Here is one told to Mr. Campbell in an inn, at the sound of Benbecula by a girl named Morag a chota Bhain—in English, Margory White Coats. The likeness of the Cinderella in the following story, may be seen in her white coats and short gown, blowing the fire in Highland inns.

"A king had four daughters, and his wife died, and he said he would marry one whom his dead wife's clothes would fit. One day the daughters tried, and the youngest only could wear them. The king saw them from a window, and wished to marry her, and she went for advice to her mother's brother. He advised her to promise to marry the king if he would bring her a gown of birds' down, and a gown of the colors of the sky, woven with silver; and when he had got that, a gown of the color of the stars, woven with gold, and glass shoes. When he had got them, she escaped with all her clothes, by the help of her uncle, on a filly, with a magic bridle, she on one side, and her chest of clothes on the other. She rode to a king's palace, hid the chest in a hill under a bush of rushes, turned the filly loose, and went to the palace with nothing on but a white petticoat and a shift. She took service with the cook, and grew dirty and ugly, and slept on a bench by the kitchen fire, and her work was to blow under the great caldron all day long. One day the king's son came home, and was to hold a feast; she went to the queen and asked leave to go, and was refused because she was so dirty. The queen had a basin of water in her hand, and threw it at her, and it broke. She went to the hill, took out the dress of down and silver, and shook her magic bridle; the filly came, and she mounted and rode to the feast. 'The king's son took her by the hand, and took her up as high as any there, and set her on his own lap; and when the feast was over, there was no reel that he danced but he gave it to her.' He asked her whence she came, and she said, *from the kingdom of Broken Barins*; and the prince said that he had never heard of that land, though he had traveled far. She escaped and returned to the cook, and all were talking about the beautiful lady. She asked about her, and was told not to talk about what she did not understand, 'a dirty little wretch like her.' Then the prince had another feast; and she asked leave again, and the queen refused, and threw a candlestick at her, and it broke, and she did as before. She put on another dress and went; the king's son had eight men on each side of the door to catch her. The same scene went on, and she said she came from the country of

Candlesticks—'TIR NAN COILLEARAN,' and escaped, leaving a glass shoe. Then the king's son fell sick, (of course,) and would only marry the woman whom the shoe would fit; and all the ladies came and cut off their toes and heels, but in vain. Then he asked if there was none other. Then a small creature put his head in at the door and said: 'If thou didst but know, she whom thou seekest is under the cook.' Then he got the history of the basin and the candlestick from his mother. The shoe was tried and fitted, and he was to marry Morag. All were in despair, and abused her; but she went out to her chest, shook the magic bridle, and arrayed herself, and came back on the filly, with a 'powney' behind with the chest. Then all there that had despised her fell on their knees, and she was married to the prince. 'And I did not get a bit there at the wedding,' said the girl."

It must be admitted that some of the stories seem to give the shadowy myth character to the forces and powers of labor. The smith easily becomes ennobled into something half infernal and half divine; but it was perceived apparently that there was something more divine than mere strength. We have the story of the wife who had fairy blood in her veins; but was married to a smith in the forest of Nordland—who at last hated her for her fairy blood. He cursed her, ill-used her, and upbraided her, and while she suffered and repented, till one day she went into the smithy to see, with a friendly eye, her husband at work; but he began as before; but on its coming to blows, she, by way of proving her superior strength, seized an iron bar and twisted it round her husband as if it had been a wire. The husband was now forced to submission and to promise domestic peace. The parable sometimes suspiciously oozes out, but rarely we believe in the oldest traditions. Our readers know the story of the Giantess, whose daughter one day saw a husbandman plowing in the field; she ran and picked him up with her finger and thumb, put him and his plow, and oxen, into her apron, and ran home to her mother, saying, "Mother! mother! what sort of beetle is this I have found wriggling in the sand?" But the mother said: "Ah, put it down, child, put it down. We must be gone out of this land now, for these people have come to live in it." The saline humor and conscious reverence, which peep out from a tradition like this, assure us that it does not belong to a very old age; but to a

period when narrators had begun to reason and to know; it might pass for one of Hans Andersen's fairy tales. Stories about smiths and swords are common to these tribes, the sword of light, the bright sword; that is, we suppose, stripped of supernatural qualities; the sword of well-tempered steel, to which, of course, extraordinary virtues were attributed. Such stories in which the mystic sword appears a kind of god, as in the romance of Arthur, point, most likely, to the first use of iron; the sword shines, cries out, the lives of men are bound up in it. We have the story even of a fox who changed himself into a sword of light, and the edge of the real sword touching an old witch, she fell into a withered fagot. Hints like these point to the dawn of time when Cunning, Strength, and Science—the mighty, almost omnipotent *three* grasped hands together and became *one*—hence we suppose the origin of the veneration which still continues for iron. As symbolizing man's power over the hidden strong forces of nature, the old iron horse-shoe, still seen fastened over many a farm-door, points to the faith in which many of these popular stories were first uttered. Illustrations of this the reader will find in the "Knight of the Red Shield." We also notice the frequent intimations of faith in the weakest; faith in results sometimes, coming out expressed in a clumsy but yet not indistinct manner. Only a few weeks since a friend of ours was admiring a magnificent field of wheat. The old farmer, to whom some pleasant remarks were made, said: "Aye, and some years ago we had three grains of wheat in a pound of plums, and I said to my old wife, now for curiosity we'll plant these in a flower-pot; and we did, and we planted all next year, next year, and next; and now, from they three grains, we've got that field, and two more yonder." Really, one might think some of our moralizing fathers had known some such incident, before they recited the following legend of

"THE MASTER AND HIS MAN.

"There were at some time ere now bad times, and there were many servants seeking places, and there were not many places for them.

"There was a farmer there, and he would not take any servant but one who would stay with him till the end of seven years, and who would not ask for wages, but what he could catch in his mouth of the seed-corn, when he should be thrashing corn in the barn.

"None were taking (service) with him. At last he said that he would let them plant their seed in the best ground that he might have, and they should get his own horses and plow to make the thrave, and his own horses to harrow it.

"There was a young lad there, and he said, 'I will take wages with thee,' and the farmer set wages on that lad, and the bargain that they made was that the wages which the lad was to have were to be as many grains of seed as he could catch in his mouth when they were beating sheaves in the barn, and he was to get (leave) to plant that seed in the best land that the farmer had, and he was to keep as much as grew upon that seed, and to put with it what seed soever he might catch in his mouth when he was thrashing the corn, and to plant that in the best land which the farmer had on the next year. He was to have horses, and plow, or any other 'gairies'* he might want for planting or reaping, from his master, and so on to the end of the seven years. That he should have seven winters in the barn thrashing, seven springs to plant, seven summers of growth for the crop, and seven autumns of reaping, and whatsoever were the outcoming that might be in the lad's seed, that was the wage that he was to have when he should go away.

"The lad went home to his master, and always when he was thrashing in the barn his master was thrashing with him, and he caught but three grains of seed in his mouth on that winter; and he kept these carefully till the spring came, and he planted them in the best land the carle had.

"There grew out of these three ears, and there were on each ear threescore good grains of seed.

"The lad kept these carefully, and what grains soever he caught he put them together with them.

"He planted these again in the spring, and in the autumn again he had as good as he had the year before that.

"The lad put his seed bye carefully, and any thing he caught in his mouth when he was thrashing in the next winter he put it with the other lot; and so with the lad from year to year, till at last, to make a long story short, the lad planted on the last year every (bit of) plowing land that the carle had, and he had more seed to set, and the carle was almost harried. He had to pay rent to the farmer who was nearest to him, for land in which the lad might set the excess of seed which he had, and to sell part of his cattle for want of ground on which they might browse, and he would not make a bargain in the same way with a servant for ever after."

As the primeval family increases in age and knowledge, the fable and the riddle

* Apparatus; also spelt goireas and gairaois.

are invented. Something of this we have pointed out in the story of the "Giantess' Daughter;" so also in the story of the fox, who, finding the bagpipes, which were usually made of tough hide, proceeded to eat the bag, and making a groan, exclaimed: "Ah! here's meat and music." But this range of tradition might open quite another class of selection; our object has been rather to call attention to the unity of the race, as manifesting itself through the varieties of popular fiction. The more closely the interesting subject of *storyology* is explored, the more curious and interesting become its revelations. Viewed from the scientific side, as a systematic study, we repeat, it furnishes us interesting contribution to the theory of the unity of the human family. Studied from any side, a number of incidents seem to be repeated over and over again; the documentary value and peculiarity being that they are never repeated twice in the same words, though they are so easily recognized. Mr. Campbell refers to the story of the Giant, whose life was not in his body, but stowed away somewhere else, and to his finding the same incident in hieroglyph on an Egyptian papyrus; and the Norse Giant, with no heart in his body, and the Arabic Djinn, who kept his life at the bottom of the sea, are evidently Eastern and Western varieties. "Nursery tales are the *débris* of natural religions, now fast fading away before the light of revealed religion, but which subsisted along with it before the flood." Twenty-five years since, Mr. Carlyle struck a fine key of explanation in his lecture on *Odin* in the *Hero Worship*, and whoso reads a little into the old Norse Eddas and Sagas, will see how plain men and women are found dealing with heroes and heroines, great birds, dragons, and subterranean powers; the elements personified, worshiped, dethroned: demons and hobgoblins, fiends, fairies, and furies; ghosts, bogies, and, high over all, some power greater and more powerful than they, the hidden reason and seed of all, to which all were certainly tending, and which could not be reached without his aid. In the same way unconscious, and yet traditional mannerisms, point in the direction of the popular tale, both point sun-wise and south ways. The worship of the sun, the usages and memories connected with it, hold in many an unconscious popular observance. There was a time when it was necessary,

in order to propitiate popular divinities, "to put the best foot foremost." The boat was rowed sun-wise—the English sailor coils a rope sun-wise; when a soldier faces about he goes right-about-face; girls dance in a circle, and usually, we believe, face the center, and move to the left, which is sun-wise. It is so over all Norseland, not only in the lonely Faroe Isles, where Mr. Campbell saw the men, women, and girls circling round the room, singing old heroic ballads in the Norse tongue, but in some benighted villages in England where still they dance round the Maypole. Mr. Campbell says:

"Now, if a man anywhere north of the equator will face the sun all day, and the place where he is all night, he will revolve right-about-face in twenty-four hours, and meet the rising sun in the morning with his right hand to the south, his back to the west, his left hand to the north, and his face towards his object of worship, if he worships the sun. If he walks round the gnomon of a dial on the sunny side, seeking light and avoiding shade, he will describe a portion of a circle from left to right, and if he crosses the arctic circle he may so perform a whole circle in a summer's day; but if an Asian or European walks continually towards the sun at an even pace, whenever he can see him, he will necessarily walk westwards and southwards, in the direction in which Western Aryans are supposed to have migrated.

"The Gaelic language points the same way. Deas means south, and right, and ready dexterous, well-proportioned, ready-witted, eloquent. Consequently to go south, and to go to the right; to coil a rope dexterously, or southwards; to be dexterous, southern, and to be prepared to set out; are all expressed by the same Gaelic words—'Deas,' 'Gu deiseal,' etc. Now all this surely points to a journey from east to

west with the sun for a leader; to a camp awakening at sunrise and facing the great leader in the morning, watching his progress till noon, and setting off westwards when 'DIA,' god of day, was south; *Deas*,* ready to lead them westwards on their pilgrimage. Surely all these northern games, dances, and ceremonies, and thoughtless acts, point to astronomical worship, and an imitation of the march of the stars round the world, or round the sun, if men had got so far in their astronomy."

We are aware that many readers will object to all this. Some primal instincts in the nature of man. We shall not attempt to argue the question; for the drift of our article, it is immaterial. We can not fail to find in these observances and traditions, stories and legends, the central stem and unity of our race, and whether it be found in what man was, or what man is, the argument is the same. We might apply the same remarks to the legends of the almost extinct Indian tribes, and Dr. Schoolcraft has gathered on the Western Continent curiosities of oral tradition similar to those collected by Mr. Campbell among the Western Islands, by the myths he has gathered the Indian is able to trace his connections with the human family in other parts of the world—there are not wanting signs of connection with the old Odin family; but the magnificent and volcano-lighted peaks of Mexico and the fertile deltas of the Mississippi valley hold legends which point to the symbolical fires of the valley of the Euphrates, and the symbolical worship of the sun.

* Pronounced Djee-A. *Djays*.

ANOTHER WEDGE IN THE INTERIOR OF CHINA.—Captain Alexander Bowers, of the Royal Naval Reserve, has performed an exploit as important, if not as interesting, as the discovery of the source of the Nile. He has taken a thousand-ton ship into the heart of China, ascending the Yang-tee to Hankow, the great tea *entrepôt*, fourteen hundred miles, by map measure, from Shanghai. He found a great city and flourishing trade, with about thirty British hong, built upon land granted by the Chinese government, more hong building, and every sign of great commercial prosperity. A club-house and church are building, and, of course, the third sign of civilization, a gallows, can not be long delayed. The anchorage opposite the town is fairly safe, the risk of the voyage is not excessive, and there seems little doubt that Hankow will henceforward be in

direct communication with London. This is really a great result from the capture of Peking, the valley of the Yang-tee being as productive as that of the Ganges.—*London Weekly*, Nov. 28A.

BIRDS AND INSECTS.—If the arrangements of nature were left undisturbed, the birds would kill so many insects that the insects could not kill too many plants. A certain insect was found to lay 2000 eggs, but a single tom-tit was found to eat 200,000 a year. A swallow devours about 440 insects a day, eggs and all. A sparrow's nest in the city of Paris was found to contain 700 pairs of upper wings of cockchafers, though food of other kinds was procurable in abundance. It will easily be seen, therefore, that birds prevent too great an excess of insect life.

From the National Review.

THE STATE OF EUROPE.*

TRANQUILLITY can never be the lot of those who rule nations. Glory they may have; the praise of men; the approbation of their own consciences; the happiness which springs from the full occupation of every faculty and every hour; the intense interest with which dealing with great affairs vivifies the whole of existence; the supreme felicity of all allotted to men—that of feeling that they have lived the life and may die the death of the truest benefactors of their race. All these rewards they may aspire to; but *repose*, a sense of enduring security, comfortable and confident relaxation of nerve, attention, and exertion, that conviction of “having attained,” of being safe in port, of every thing “being made snug,” which enables a man to say to his soul, “Soul! thou hast much peace laid up for many years: eat, drink, be merry, and sleep;”—these blessings are not for either sovereigns or statesmen, at least not for those of Europe in modern days. “A murmur of the restless deep” is ever at hand to disturb even the briefest slumber. No sooner is one war ended than another is begun. No sooner is one quarrel, which taxed the resources and menaced the existence of great nations, quenched in utter exhaustion or settled after infinite intrigue, than some little insignificant question—a cloud at first sight no bigger than a man’s hand—arises in some other quarter, swells into unexpected magnitude, and threatens the direst results. Not a day passes which does not bring to the bureau of the minister for foreign affairs of every great state dispatches pregnant with the fate of empires and of peoples—inchoate “difficulties” which either slovenly neglect or judicious culture may nurse into mighty conflicts. Sometimes it is an oppressed “nationality” whose cup of misery is full, and which can keep silence and endure no longer. Sometimes it is a second or third

rate monarch who catches cold or falls from his horse, and dies *mal à propos*. Sometimes it is an intemperate sea-captain who insults our flag. Sometimes it is a savage tribe who murders our ambassador. Sometimes it is a weak and vain consul or envoy or *chargé d'affaires*, who makes a mountain out of a molehill, and gets up a wholly gratuitous row of his own. Sometimes it is an over-active or over-forecasting sovereign, who drops a pungent expression to an ambassador, or makes a troublesome suggestion to his parliament, that originates the uneasiness and the storm. But what with Sir John Bowring and the Arrow; what with Captain Wilkes and the Trent; what with General Harney and the “Island of San Juan;” what with Sir Hamilton Seymour and the “sick man;” what with the King of Denmark’s death, and the King of Greece’s dismissal; what with Louis Napoleon’s New-year’s day words to the Austrian minister, and his congress letter of a few years’ later date—there is no rest for the politician on this side of the grave.

Just now the appearance of the world is one of singular disturbance. It is a seething caldron. In the extreme West a civil war is raging with almost unexampled ferocity, and on a quite unexampled scale; a civil war with which, thank God, we have nothing to do except to watch it, to suffer from it, and to deplore it. In the extreme East a civil war appears imminent in Japan, of which we, if not the *causa causans*, are certainly the *causa sine qua non*; and a civil war has raged for years in China, in which we have begun directly to take an active part. Greece has just got her new sovereign—who does not seem anxious to pay his predecessor’s debts. Mexico is waiting for her new emperor; and the emperor appears to be waiting till she definitely knows her own mind, and wishes her to be off with old love before she is on with the new. The new King of Denmark seems likely to inherit a war by the same title by which he

* *Le Moniteur*, 1863. (Emperor’s Letter proposing the Congress.) Paris, 1863.

inherits a throne; and two of the great powers who guaranteed to him both his scepter and his dominions are now marching hostile troops into a part of his territory on a plea which no outside politician is at all able to comprehend. It seems by no means improbable that a European war may arise out of a local dispute so complicated as to defy unraveling, and to our eyes so comparatively unimportant as to make us even more impatient and indignant than we are alarmed. Italy still suffers from two irritating sores which forbid all political comfort or security; while the barbarities of the Russian troops and officials in Poland have excited almost to the war-pitch the languid and dormant sympathies of Europe on behalf of that unfortunate and unsatisfactory race. And to crown the whole, the Emperor of the French, with his characteristically perverse sagacity, seizes the present moment to throw into the boiling pot one additional ingredient of perplexity and disturbance in the shape of a proposal for a European Congress to sit upon the agonizing body and prescribe for the sick man.

It would be too much to ascribe to Louis Napoleon all the feverish unrest of the last fifteen years. But it is undeniable that since he ascended the presidential chair of France, Europe has enjoyed no repose whatever, and that in every single conflict or convulsion that has occurred, or been averted, he has had his share, and usually a principal share. It is certain that immediately after his accession to power his brain was teeming with a variety of projects all incompatible with the existing European arrangements, and that enough of these leaked out to induce that general increase of armaments which has pressed so heavily on the resources of every State, and probably had a great deal to do with the wars which have since taken place. The *coup d'état*, whatever opinion we may form as to the political sagacity and moral defensibility of that proceeding, unquestionably pointed out its author as a man who would scruple at no measures, however violent and sudden, for the attainment of his ends, and made it necessary, therefore, for every potentate against whom he might by possibility entertain hostile designs, to be in a far more forward state of preparation for all contingencies than would be needful where they had only to

deal with ordinary men observant of ordinary rules and controlled by ordinary scruples. It must be conceded, too, though we hold Mr. Kinglake's theory as to the parentage of the Crimean war to be utterly extravagant and wild and in the teeth of acknowledged and notorious facts, that our dispute with Russia would assuredly not have culminated in a war had Louis Philippe, instead of Louis Napoleon, reigned at the Tuileries. The occupation of Rome by French troops has been one of the standing causes of European insecurity and uneasiness; and for the continuance of this occupation, though not for its origin, the emperor is solely and distinctly responsible. The Italian war of 1859 was his own deliberate and spontaneous act; and though we hold it to have been a beneficent, if not, strictly speaking, a righteous act, still it was a most revolutionary and perturbing one, and one the ultimate convulsing reverberations of which are not yet exhausted. Disgusted as we had long been with Mexican outrages and Mexican evasions, we should never have undertaken the Mexican expedition without the instigation of Louis Napoleon; and to him alone is due the conversion of a wretched republic into a possibly great empire. The secession of the Southern States of America was a strictly domestic event, which lies neither at his door nor at ours; but it is entirely owing to our self-abnegation and recalcitrance that that secession has not long since ended in the separate establishment of a powerful slave State, of which half the responsibility would have been ours. If it had not been for his initiation and zealous urgency, it is probable that England would never have ventured to incur a diplomatic rebuff from Russia by interposition between the butcher and his victims; and it is quite certain that, if our interest and zeal in the matter had been equal to his, either Poland would ere now have been free, or we should have found ourselves engaged along with France in a second Russian war. Finally, scarcely any *pacific* proposal has ever created such universal uneasiness and alarm as the emperor's suggestion of a congress; and this proposal, with all its disturbing ideas and all its possible results, is attributable to him alone.

In truth, no man in recent times, with the single exception of his uncle, has ever exercised any thing like the same amount

of *personal* influence over the current of the world's affairs. In former days, indeed, a great king, or a great minister, or sometimes even the mistress of a man in an arthritic position, was able to decide on peace or war, on the seizure or surrender of territories, on the happiness or the wretchedness of millions. In the more complicated politics and the more civilized times in which our lot is cast, these great issues usually lie in the hands of solemn assemblies, or the combination of events, or the working of that mighty but undefinable agency called public opinion. Where individual passion and individual will once guided and fashioned our courses, these are now determined by national sentiment and national resources. To know what is likely to happen we are wont to study the relations, the feelings, and the capabilities of the several peoples of the world, and to take small account of particular men among them. But now he who would be a forecasting and sagacious political seer must master, as the most proximately determining influence among all, the nature of the Emperor of the French, the proclivities of his singular character, and the exigencies of his intricate position.

Louis Napoleon has given us many means of knowing him. Perhaps scarcely any potentate has ever afforded such ample materials to the speculator and the student. He has done much; he has written much; and for so habitually silent a man he has spoken not a little—and when he does speak, he usually speaks significantly. As conspirator, as adventurer, as prisoner, as author, as deputy, as president, as emperor, he has been before the public for thirty years. If we do not understand him now, his nature must be peculiarly deep, complicated, or inconsequent.

In some respects he is a more remarkable man than even his uncle. He is not, it is true, gifted with his uncle's genius, either for administration or for war; but on the other hand he is not cursed with that willful and impracticable temper which so often neutralized the wonderful powers of the first Napoleon, and which led to his final overthrow. Napoleon the Third is *pertinacious* without being obstinate. He adheres to his plans often for long years; he recurs to them persistently again and again after the world fancies he had abandoned them for ever; but he seldom in-

sists upon them doggedly, vehemently, or blindly, in the face of formidable obstacles. The uncle, especially in his later years, used to be irritated by opposition into something very like insanity. The nephew measures the force of the opposition considerably, and recoils before it if it appears likely to prove stronger than he wishes to encounter. His temper, we apprehend, is naturally equable and placid. At all events, he never loses it, or gives way to those bursts of undignified passion which on more than one occasion disgraced the position and alienated the friends of the great warrior. Perhaps only twice since his accession to power has Louis Napoleon acted from passion rather than from deliberation; once when, in spite of the earnest remonstrances of all his well-wishers, he insisted on confiscating the Orleans property, and again when, after the Orsini *attentat*, his shaken nerves and natural indignation for a short period got the better of his judgment. He, however, recovered himself—and recovered with grace—as soon as he had time for reflection, and saw that danger was becoming imminent; and thenceforward he exerted himself to soothe down the angry passions of the people and the army.

Again, though Louis Napoleon is in one sense a *daring* man, he is the reverse of a rash or desperate one. This may seem a strange assertion of the Hero of Boulogne, Strasburg, and the *coup d'état*, but it must be remembered that the first two wild adventures belong to the period of his nonage, and the latter, though a bold and hazardous stroke for the supreme power, which he was determined to attain or die, was prepared with the most sedulous, patient, and forecasting care. Since that period certainly his caution has been more remarkable even than his political courage. He feels that he has won too much, and has too much to lose, to venture on any *very* hazardous attempts. Like Charles II., he is resolved never again to go on his travels. He takes infinite pains to make all his ground safe under him before he acts, as far as possible, so as not only to preclude all risk of failure, but to evade much probability of earnest opposition. He is especially anxious to carry as great a majority with him as he can—majority, that is, of strength, if not of numbers. He procrastinates and postpones with sometimes a self-de-

feating excess of hesitation, wishing to keep as many courses as possible open to him, and to keep them open as long as he can. He shrinks from the *irrevocable* much; he shrinks from the *desperate* or the gamblingly dangerous still more. He likes to undertake all his ventures in concert with allies who will render discomfiture impossible, who will divide the cost, who will take the lion's share of the labor and the peril, and leave him the lion's share of the glory and the gain. He would never have gone to the Crimea unless Great Britain had been ready to go with him. He would never have gone to Mexico if Spain and England had not in the first instance joined the expedition. He would probably never have ventured on the Italian war of 1859 if he had not felt certain that the revolutionary element in Europe would suffice to insure his success, if he should find it necessary to call it into action. And we all of us remember that when the critical moment came he shrank from calling it into action, and contented himself with a *half* success instead. He earnestly desires no doubt to recognize the Confederate States, to establish their independence, and thus to consolidate and secure his own grasp on Mexico; yet he has twice abandoned, or at least postponed all action in this direction, because he could not obtain the countenance or support of England. We may feel very confident, therefore, that he will never bid defiance to any very powerful combination of foes, or act in such a fashion as to unite all Europe against him. His tact and good sense in drawing back when necessary, and seeing when it is necessary, constitute at once his security and ours.

He is *vain*, and he would neither be a Frenchman nor a suitable ruler for Frenchmen, were he not; but his vanity is a quality rather than a weakness. It may be unphilosophic, but it is neither irrational nor excessive. He loves grandeur; he loves power; he loves admiration; his enemies say that he aspires to the reputation of universality, and that he is prone to monopolize merit which of right belongs to others; he is desirous on all accounts to fill unceasingly a vast space in the eyes of Europe and the world. We doubt, however, whether this sentiment will ever betray him into any serious errors, and we are inclined to regard it as much a matter of policy as a mere per-

sonal characteristic. Nor is it the only instance in which his peculiar attributes subserve his policy and strengthen his position. He thoroughly understands the nation which he governs and the place which he holds. We think, too, that he understands his epoch, and the elements of political causation in the actual world, better than any other ruler now extant, whether sovereign or minister. And probably the secret of his especial and peculiar comprehension of the *popular* mind, both in France and throughout Europe, lies in his unaffected and innate sympathy with it. He has thought patiently, he has brooded long, he has studied profoundly. He is assuredly on most points in advance not only of the French nation but of nearly all French politicians. He has sounder notions of political economy, he has a greater capacity of appreciating foreign ideas and foreign institutions, he has a more dispassionate and less perverted vision, than any of them. His mind and character are essentially of the statesmanlike order—though not of the highest order of statesmen, because his ultimate aims are not noble, and his estimate of men is not high. But for a skillful adaptation of means to a clearly seen end, for *tentative* tact in a perilous course, for far forecasting, and every now and then for deep insight, he has shown himself superior to every public man of the day, and he has found himself in one of the very few positions in the modern world in which his qualifications for government could have found a fair and open field.

Practically, perhaps, his most pernicious characteristic is his *restlessness*. His mind is naturally busy, scheming, and prolific; and he finds it for his interest, as the elected chief of a most restless people, to follow his natural bent. He broods over a variety of conflicting plans, sometimes throwing out one feeler to the public, sometimes another; sometimes waiting till the project is matured; sometimes offering the world a sort of option between several disturbances, but never leaving it an hour's conscious security of repose. He is *incalculable* too as well as *rénuant*. He is for ever breaking out in a fresh place. You never know what he may do or say next. You only feel certain that he will never be long without doing or saying something. His mind may grow any sort of crop—wheat or weed. The only positive thing is, that it can never lie

fallow. As long as he lives, to use an expression of one of his countrymen, *il n'y aura rien de certain, hors l'imprévu.*

In addition to the peculiarities of the emperor's character, those who would be able to form a sagacious estimate of the prospects of the political world must take an account of the various and inexorable exigencies of his position. That position is anomalous in the extreme. He takes rank among the sovereigns of Europe, and is about the most powerful of them all. But, singly out of the whole list, he holds his scepter partly by right of his own skillful and daring seizure of it, and partly by the direct sanction of the popular choice. He is the only monarch of the old world who has been distinctly elected by the people, who has been chosen because he represents them, who reigns because he understands them. He is the Crowned Democrat of Europe. He does not exactly, like actors, "live to please," but, like actors, he "must please to live;" and he must please both at home and abroad. France is no easy taskmaster. To satisfy her imperious demands, he must keep her prominent and make her glorious. He must not be quiescent, for what she loves is corruscation and *conspicuousness*; and these conditions can only be fulfilled by a sort of unresting officiousness in the concerns of all nations. Yet, on the other hand, he must not be baffled, and he must not fail; he must be ever on his guard lest the interposing activity which is exacted from him should draw upon him either ridicule or snubs. He must be ever on the watch to further those "ideas" which have taken so strong a hold of the French brain, and for which the French nation is *sometimes* willing to make war. He must stand forward as the champion of those oppressed nationalities with whom even Gallic selfishness has learned to sympathize. He must never let any other power steal a march upon him even in the most distant quarter of the world. He must never let there be a disturbance or a conflict any where, without stepping forward either as auxiliary or pacificator. Yet at the same time he must never be discomfited or rebuffed. All his expeditions must succeed, and all his battles must be victories. His wars, too, must be neither long, disastrous, nor costly. France is in one point singularly and incurably irrational, and refuses to listen to the "inexorable logic of facts." She ex-

pects her emperor to pursue a career of all others the most expensive, yet she expects him never to call upon her for any contribution to the outlay. She will have her theater and her banquet; but she refuses steadily either to take the ticket or to pay the bill. Her wars and interventions must bring her much glory, and yet cost her no treasure. Nothing will induce her to endure a new tax, or to keep out of an exciting adventure or a tempting broil.

Hitherto Louis Napoleon has satisfied all her inconsistent cravings with marvelous success. He has kept all the world on the tip-toe of expectation to know "what France would do next." He has made all Europe and half Asia uncomfortable and uneasy. He has compelled all nations to double or quadruple their armaments. He costs his fellow-creatures at least fifty million pounds per annum. He has, in conjunction with England, taken the strongest and best defended fortress in the world. He has, in conjunction again with England, defeated, humbled, and disarmed that hereditary northern foe who inflicted the first crushing reverse of his uncle's career of conquest; and ultimately was, next to England, the chief instrument of his downfall. He has for twelve years kept the Sovereign Pontiff of the Catholic world a dependent on his armed protection. He has done what various potentates and warriors before him had striven to do in vain—he has created, or paved the way, for the creation of a new and mighty kingdom. He has wrested one large province from Austria, and bestowed it upon Italy. He has wrested two provinces from Sardinia, and annexed them to his own dominions. He has conquered an anarchical republic, has changed it into a hopeful empire, and has bestowed the scepter of it upon the prince of that foreign house which his uncle so often humbled, and into which he finally intermarried. And if he had been encouraged to follow out his own designs, he would ere now have crowned all his other exploits by establishing the independence of the Southern States. All this he has done abroad: at home he has rebuilt Paris, and partly rebuilt other great cities; he has remodeled the first army, and reconstructed the second navy in the world.

And he has contrived to do all this without imposing a single new tax, and without laying on the people any burden

which is generally or sensibly felt; for although the cost of living in France has greatly increased, it has not increased so fast as either the wages of labor or the profits of trade. By profuse borrowing, and by the sagacious system of open loans, he has contrived to make his lavish expenditure a source of actual immediate gain to the small capitalists, to the hoarding peasants, to the saving classes; that is, to nearly the whole of the laborious classes of France. By providing them with a safe, accessible, and lucrative investment for their small and patient economies, he has added to their income, and has, perhaps, also reduced the price of land, which it is their great ambition to possess, and the purchase of which was formerly the only mode in which they could invest their savings. His course of action has, at present and ostensibly at least, proved as profitable to the *bourgeoisie* as to the peasantry. He has so dealt with the whole system of railroads in France as at once enormously to aid and gratify all the shareholders in it, and also vigorously to stimulate the spread of that species of outlay which, of all others, has been found most to develop industry and to yield rich returns. The foreign commerce of France has, we believe, doubled since his accession; and it would be ungrateful to deny that a considerable portion of this augmentation is due to his fostering attention and superior sagacity. How long he may be able to continue this singular prosperity and success it is impossible to say. There are not wanting indications which may warn him that there is a limit to the road he has been hitherto pursuing. France is unquestionably growing in wealth, but her debt is growing also; and her more competent financiers are evidently taking the alarm. Now alarm is danger—and danger of the most signal sort—to a nation which has stretched its credit and mortgaged its resources, and yet declines to be taxed to meet fresh emergencies. We may, however, feel assured that Louis Napoleon will not be blind to the signs of the times; that he will not venture on any very perilous enterprise, or any very desperate expenditure; that, if the alternative be forced upon him, he will risk *quiescence* rather than discomfiture; and that, of the two, he will prefer to disappoint France rather than to tax her. At the same time we should do well to remember how vast-

ly America has enlarged our ideas of the possible limits of the borrowing power in a country where the people are unanimous, or where the government is popular.

Louis Napoleon has some one else besides France to satisfy—a power at once his master and his tool—namely, the Revolutionary party throughout Europe, the democratic element in Continental States, the discontented and oppressed nationalities—those, in a word, who are fond of describing themselves as the adherents and devotees of “the principles of 1789.” With this party the emperor has strong sympathies; to it he is under great obligations; from it he has great hopes; of it he entertains great fear. He understands thoroughly its strength, its nature, its temper, and its designs. His early Carbonari connections gave him this knowledge, and it is a knowledge which, being his exclusive possession, confers upon him a notable advantage over all other governments and potentates. Then, too, he not only understands this party, but he believes in it. He is deeply impressed with the resolute purpose, the tenacious will, the martyr-like fanaticism, and the unscrupulous morality of its leaders. He is, we apprehend, strongly convinced that the “principles of 1789” are those which will spread and finally prevail; that, in the perennial contest between Democracy and its rivals, the ultimate victory must remain with the former; and that all political progress, as well as all political convulsions, is tending towards the establishment in all lands of the sovereignty of the people, delegated to and embodied in the sovereignty of one man, as the ultimate form which states and governments will assume. Of this tendency he is determined to be the exponent, the patron, and the leader, as he has contrived to make himself its first and most illustrious exemplar. This conviction we hold to be the key to nearly all his policy, past and present. He has no more notion than Tocqueville had that any aristocracy or autocracy can in the end make head against the organized and well-led might of the popular masses; he has a rooted distrust and dislike, almost amounting to contempt, for a parliamentary and constitutional *régime*; and he has no faith in the *working* capacity of really republican institutions. His *doctrine*—the *idée Napoléonienne*—is the administration of one man, sustained by the

great body of the people, imbued with their sentiments and wishes, but endowed with sagacity to sift them, to guide them, to modify and enlighten them, yet at the same time with full power to establish and enforce them. There is vast might because there is great truth in this conception of individual will and talent based upon brute force, backed by it, and wielding it. But herein also lies the great danger of modern civilization; and it is the devotion of Louis Napoleon to this conception, the clearness with which he apprehends it, and the vigor with which he grasps it, that renders him the most formidable foe that the higher elements of moral and intellectual, as distinguished from mere material, civilization ever had. It makes him strong with all the strength, and stable with all the stability, of a true idea, but at the same time pernicious with all the mischief, and mean with all the lowness, of a groveling and narrow aim.

For a man of such a nature and of such requirements as we have delineated, a solemn congress to sit in judgment on the wants and grievances of all nations must be the next best thing to a brilliant war undertaken to redress the injuries of one. In some respects it is even more tempting. It costs nothing; it does not risk much; and it places France and her emperor on a pedestal of conspicuous influence and conspicuous philanthropy. We may be of opinion that such a congress would be more likely to disturb much than to arrange any thing, and we may think it not the best way, nor the way at all, to settle the unsettled questions of Europe. But we can not deny that there are such unsettled questions; that they urgently press for settlement; that till they are settled we can have no hope of permanent security; and that it is better that they should, if possible, be settled by diplomacy and discussion than by obstinate and desolating wars. There is the question of Poland. Even the languid blood of England is beginning to be stirred to its depths by the brutalities it reads of, by the obvious resolve to proceed to something like the utter extermination of a whole people, and by the savage and unmanly severity with which that resolve is being carried out. We are beginning to ask ourselves whether Europe can stand by and see such things done, and whether, though we are hopeless of doing much good, we are not "verily guilty concerning our

brother" if we permit the perpetration of so much evil. France is truly and deeply interested in the matter; her sympathy with the Poles is perhaps the one really generous and disinterested feeling which ever enters into her foreign policy; and Louis Napoleon, as secret chief of the revolutionary democracy of Europe and as sharing many of its sentiments, can not wish, and can not afford, to have one of its most warlike and most pertinacious nationalities trampled out. If negotiation can do nothing in this matter, it is evident that a general and desperate war can only be averted by the passive witnessing and almost the tame connivance on the part of England and France in the consummation of a great iniquity and a cruel wrong. There is the case of Rome. It is clear that nothing but the fixed resolve of the Italian statesmen not to quarrel with their great, though in some respects their unintentional, benefactor, and their conviction that a conflict with France must end in their discomfiture and perhaps their total ruin, have been able to keep down the impatient patriotism of the Roman people. It is certain that their influence will not be able to hold back the revolutionary party for ever; and it is doubtful whether they can hold it back for long. All Europe, as Catholic, is so deeply interested in this question, that it must have formed one of the first questions for discussion at the projected congress; and the emperor in calling that congress could never have dreamed of holding it back, but must really have intended to call Europe into counsel to advise him how to escape with safety and without discredit from his false position. There is the case of Venice. Every one feels that as long as Venice remains Austrian, war may break out any moment, and must break out before many years are past; that in such a war the strongest sympathy of England, and most probably the active aid of France, will be enlisted on the side of the Italian kingdom; and that Austria can only be induced to surrender Venetia without a war by such pressure as only a European congress could bring to bear upon her, or such compensation as only a European congress could offer her or procure for her. Lastly, there is the case of Schleswig-Holstein, a complicated question and a small issue, but one which at the moment we are writing is endangering the peace of Europe more seriously than any controversy that

has been opened since the Italian campaign, and which it really seems as if a conference of all the interested powers *might* be able to settle amicably.

Now, though we think that on the whole our government were right in fancying that danger rather than safety was likely to spring out of the emperor's project of a congress, and acted judiciously therefore in declining to join it, yet we can not help feeling that they might have discouraged it in a less dry and cold fashion. We doubt whether our mistrust of Louis Napoleon did not in this case influence us somewhat too strongly, and prevent us from doing justice to the element of sincere and disinterested good intention which really formed part of the mixed motives that induced him to suggest the scheme. We believe there is in his character an ingredient both of the grand and the philanthropic which we habitually fail to appreciate—an ingredient strangely imperfect and impure indeed, and quite *sui generis*, but notwithstanding actually existing and genuine after its muddy fashion. He is, we apprehend, utterly devoid of the moral sense, as we in England and as most men in most countries understand it. But this deficiency he shares with many eminent Frenchmen—with Napoleon I., for instance, and with M. Thiers. We do not imagine that he would be restrained by any scruple or by any deference to principle from trampling down or stepping over any law or any life which stood between him and the cherished purpose of his soul. We have no doubt that like most foreign politicians he considers in his calculations almost exclusively the adaptation of his means to his ends, and scarcely ever or at all the righteousness of that end. Though the reverse of cruel or vindictive, no one would characterize him as a benevolent man or a lover of his species. But at the same time we believe that there mingles in his singular and complicated nature—what we have noticed in other jurists and philanthropists who were neither tender-hearted nor religious, nor specially moral men—a sort of desire to improve the condition of the world, to set things straight that are obviously wrong, to rectify mistakes and to redress grievances from which no one benefits—a philosophic and *workmanlike* dislike to seeing any thing, especially things appertaining to government and popular welfare, stupidly man-

aged and *ill done*—a genuine and unselfish wish to benefit mankind, not from any love for them individually or concern for their happiness, but from an instinctive and intellectual wish, inseparable from all thoughtful and *trained* intelligences, to have things well done, to see people well off, to make practice correspond to theory, to make the world at large what their own minds deem that it ought to be. The views of these men may be narrow; their philosophic insight may often be at fault; their temper may be sometimes meddlesome and troublesome, and their disposition not unfrequently dogmatic and tyrannical; but still they are not without their merit and not without their use, and ought not to be too suspiciously or antagonistically met. Now we regard Louis Napoleon as one of those cold and theoretical philanthropists; and we believe that while considering first his own interests in every scheme and measure he propounds, and next those of France as connected with his own, he is still sincerely anxious to remove what seem to him anomalies and blots on the fair face of the political landscape, to obliterate causes of danger and disturbance, from which he and his, as well as others, may ultimately suffer, to stand forth in history and before Europe as an imperial and far-sighted statesman, who saw what was wanted, and supplied it, who saw what was evil, and made war upon it, and who left the world at large happier, smoother, *better arranged*, more sensibly conducted than he found it. There can be no doubt that there are elements of great disturbance extant in the European system. There can be no doubt that he who can eliminate or neutralize these elements would confer a real blessing on humanity; and what more natural than to call together in conference all parties interested in the same great issue of peace and order, to assist in the work of neutralization and elimination?—and what more gratifying than to have them meet in Paris, and to preside over the grand Federal Parliament of Humanity in person?

There is another reason why we should treat Louis Napoleon with a more cordial appreciation and with less suspicion than we are usually inclined to show. It is certain that he is more favorably disposed to England than Frenchmen generally are, and, indeed, than any party or class who have ever held power in France. This

favorable disposition arises from many causes combined. He has a more philosophic mind, or rather a less narrowly and limitedly *national* mind, than the rest of his countrymen; he appreciates our character and our institutions far better than they, partly because he knows them much more thoroughly, but also because he has much more power of appreciating what is foreign; and while his good sense fully enables him to estimate our strength, all that is superstitious in his nature makes him determined that, if he can avoid it, that strength shall never be arrayed against him. He understands us too well to believe that we are the selfish and perfidious people we are usually represented to be by continental Europe and America; he can make far more allowance for our crotchets; and even when we thwart him, he is not without some capacity for doing justice to our motives. We are not sure that, all things considered—both the language of our press and the action of our government—he has not behaved as forbearingly to us as we have done towards him; and certainly we can not say the same either of the French army, the French Orleanists, or the French journals. At almost any moment of his reign he might have gained popularity by insulting us; he might have let loose the whole French people against us; we have not failed to give him what on the other side of the Channel have been regarded as plausible and even just opportunities of doing so; yet he has never done so, and has more than once slightly risked his popularity by declining to do so. On the whole, the *entente cordiale* between the two nations is safer with him upon the throne, Buonaparte as he is, than with any other ruler, or any other *régime*. And we ought not to be unmindful of, nor ungrateful for, this most material fact.

The position of the emperor at the present moment is more critical and less satisfactory than it has been for years; and when he is in difficulties all Europe is in danger. In the first place, his finances are not flourishing. The commerce of France is prosperous, the ordinary revenue is increasing, and the accumulated wealth of the country augments from year to year. But there is a regular and a large deficit in the public accounts; the unfunded debt has reached a figure which few consider safe; it is suspected that if

all balances were properly kept and unreservedly published, it would be found that the total expenditure exceeds the total income arising from taxation by many millions (some say twelve millions) annually. These facts have alarmed the monetary world; that alarm has been increased by the continuous drain of specie to the East, which has now become a normal occurrence; and uneasiness among moneyed men, if it last long and is well founded, sooner or later spreads to the general public. It seems probable that a point has been reached in the financial position of the empire at which either retrenchment must begin in earnest, or some popular excitement must be resorted to sufficiently strong and stimulating to banish every notion of economy from the Gallic brain.

Then the unreasoning mind of the nation—that is, the mind of thirty-five out of thirty-seven millions of Frenchmen—is discontented on two matters of foreign policy. The emperor's popularity has been shaken because he *has* interfered in Mexico, and because he has *not* interfered in Poland. The French people never construe contentedly the *sic nos non nobis* strain. They do not understand making honey, or plowing furrows, or building nests for other people; or, if they ever can do these disinterested things with comfort, it is to aid a democracy or to promote a revolution. To rescue a distant country from anarchy, in order to construct a throne for an Austrian prince, may have a peculiar glory of its own, but the glory has a quality of barrenness about it which deprives it of all attraction in their eyes. On the other hand, to allow a restless race of revolutionary sympathizers to be extirpated without drawing the sword to prevent the irreparable crime, argues, they fancy, either a hesitating purpose or a conscious weakness, neither of which they like to attribute to their chosen representative and chief. In the one case success, though brilliant, has been dearly bought, and has brought no solid gain to France. In the other case there has been mortification as well as discomfiture, and the temper of France is not trained to bear either with equanimity. Close upon these two causes of grave dissatisfaction has come the disappointment in reference to congress. A most gorgeous and flattering vision has been flouted for a mo-

ment before the dazzled eyes of a vainglorious nation only to be withdrawn, and for them to be told in a stage whisper that the withdrawal is attributable to the jealousy of England and the selfishness of Austria. Their emperor has been baffled, and they will only forgive him for his discomfiture by turning their anger against those who have discomfited him.

Just at this time the Chamber meets, ready to rub every sore place, and to discuss every topic of foreign policy in an irritating spirit. That Chamber, for the first time since the establishment of the empire, really contains a considerable number of opposition deputies, fully capable of making their opposition formidable, far more than a match for any orators whom the emperor can pit against them, with their temper exasperated, and their consciousness of power enormously enhanced by the knowledge that they were elected by large masses of the people, and in spite of the most vehement and unscrupulous efforts of the government. Louis Napoleon must now make up his mind to encounter the searching criticism, and perhaps the vehement denunciation, of his

policy on the part of men who have no motives except fear to be either moderate or sparing. He must either meet them in argument or silence them by force. And to silence them by force would involve a second *coup d'état*: and, considering the hundreds of thousands of voters who elected them, would be virtually to declare war against the population of the cities who, as the recent elections at Paris and Dijon show, are at present by no means either intimidated or well disposed.

Precisely at this very conjuncture—while his hands are full and his horizon threatening with embarrassed finances, hampering and unpopular military success, discrediting diplomatic failures, defeat at the hustings, and menace in the Chamber—the Schleswig-Holstein quarrel on the one side, and the Polish insurrection on the other, step forward to offer him a way of escape from all his difficulties, except the single one of an impoverished exchequer; and possibly from that also, if popular enthusiasm could be aroused sufficiently to carry off a gigantic “open loan.” The temptation ought not to be regarded lightly.

From Chambers's Journal.

BANK-NOTES, FROM THEIR BIRTH TO THEIR DEATH.

THE paper upon which the notes of the Bank of England are printed is manufactured from the whitest and best of linen rags, by one firm at Laverstoke, in Hampshire. It is made in sheets sixteen inches long, and five inches wide, each being designed for the printing of two notes; they are divided in the middle after leaving the press; therefore, every note issued by the Bank of England has three rough or deckle edges, and one smooth edge. The paper and water mark has always been the great difficulty to makers of forged notes. The engraving has been successfully imitated, so much so, that even experts have been deceived by it; but spurious paper has never, up to the present time, stood the test. In the recent robbery of bank-paper from the mills, which caused so much anx-

iety to the public, the forgers had an opportunity such as they never had before, and, it is to be hoped, never will have again; yet even with this advantage, they were entirely unsuccessful. The paper appears to have been taken from the mills unsized, and the after-sizing was badly done, giving a dirty appearance to the notes: in fact, to those whose duty it is to examine notes all day long, this appearance gave to these notes an uncomfortable, suspicious look.

A quantity of paper, enough for making about nine hundred and ninety thousand notes, is forwarded to London once a month; it is delivered to the bank-note paper-office, where it is counted, and then handed to the printing-office. After passing through a machine which prints all

but the numbers, dates, and signatures, it is returned to the paper-office; in this transition state it is kept in store; as notes are required, it is again passed through a machine for completion; each sheet is then cut in half, as before stated, making two notes; they are counted, and carefully examined by cashiers, whose duty it is to reject all notes which are indistinctly printed, or are imperfect, for the Old Lady is very particular on this point; tied up in bundles of one hundred notes each, and five of these bundles in one, making a large bundle of five hundred notes.

The average daily manufacture is about thirty-seven thousand notes, or seventy-four bundles of five hundred notes; each bundle weighing one and a half pounds. The number of notes made in a year will be over eleven and a half millions, the paper weighing more than fifteen tons. Books are printed at the bank, with a record of every note issued. Every note presented at the bank for payment, is marked off these ledgers on the day following; the date of payment being stamped on the note and in the ledger. Should a forged note by any chance be passed, the impostor would assuredly be turned out the following day, on reference to the ledger for posting it.

About thirty-seven thousand notes are presented daily for payment; they are canceled by having the signature torn away, and two holes, the size of gun-wadings, punched through the amount in the left-hand corner of the note. Every such note is kept at the bank ten years; and the boxes containing these notes, if placed end to end, would reach from the bank to Kew Bridge, or more than nine miles. The authorities take pride in the fact, that should reference to any one of these notes be required, by furnishing the number, date, and amount, in ten minutes it would be placed before you.

Two or three years since, some of my readers, while walking in the vicinity of the bank, may have noticed small flakes like snow descending, and have become sensible of a smell something between that of a smouldering composition candle and burned curl-papers. It was a holocaust to the Old Lady. What they saw and sniffed was all that remained of what had done duty for twenty millions or thereabouts.

The notes are burned once a month,

and the practice now is to place them in a brick furnace, the smoke from which passes through water, thus avoiding all unpleasantness.

The Old Lady has some curiosities in the way of bank-notes. There is a note for one million; a note for five hundred and fifty-five pounds, dated 1699, bearing several receipts on the front for part-payment, as at that time payment on account could be taken; a twenty-five pound note, which was in circulation one hundred and eleven years—this amount, at compound interest for the time, would amount to six thousand pounds; a one thousand pound note, with which Lord Cochrane paid his fine. Lord Cochrane has given vent to his feelings, by writing on the back of the note as follows: "My health having suffered from long and close confinement, and my oppressors being resolved to deprive me of liberty or life, I submit to robbery to save murder, in the hopes of living to bring the delinquents to justice.—*Grated Chamber, King's Bench Prison, July 3d, 1815.*"

Bank-notes are subject to many mishaps: they are buried, burned, drowned, washed to pieces, and eaten.

Not many years since, a laborer in taking down a hedgerow came across a small box buried in the soil. Upon examining the contents, they were found to be bank-notes, the proceeds of a robbery, which had occurred so long previous as to be almost forgotten. It is supposed that the thieves being hard pressed by officers of the law, hid the box where it was found, and were perhaps taken and hanged for some other crime, and so their secret died with them.

It is not an uncommon occurrence for notes to be thrown into the fire along with waste-paper, and burned. Sailors, who, by the by, appear to have a penchant for pipe-lights worth five pounds apiece, are not the only persons who burn bank-notes; they are frequently used to light pipes, candles, gas, etc.

Notes have been blown into a river, and although the song has it:

"For a guinea it will sink,
But a one-pound note will float,"

five-pound notes will not.

Observe that man with the rueful countenance, standing at the window of the secretary's office; he is exhibiting what

appears to be a pellet of paper, such a one as when school-boys we used to jam into our popguns—pellets like unto this one would have made them “ten-pounders,” for it is a ten-pound note, and has only been sent to the wash in a waistcoat pocket. The small lump will be placed in careful hands, and will be delicately manipulated. If the number and date be decipherable, the note will at once be paid.

A wealthy grazier, on his return from market one day in summer, took out his well-filled pocket-book to count the contents; placing them on the drawing-room table, which stood between two windows, he was astonished to see a twenty-pound note blown out of the room. He rushed to the window only in time to see the note disappearing down the throat of his daughter's pet-lamb. The animal was killed directly, and the note taken from its stomach, and sent to London, with a

statement of the circumstances. It was of course much discolored; but being “all there,” the grazier got his twenty pounds.

When a note is irrecoverably lost, the usual practice is—if the note be under one hundred pounds—to make the loser wait five years, after which time application for payment will be entertained. But, with notes of one hundred pounds and upwards, a sum equal to the amount lost is invested in consols, in the names of the Governor and Company of the Bank of England, for twenty years. During this time, the dividends, as they accrue, are paid to the loser; and at the end of the term, the stock is transferred into his name.

It may be fairly said, from the above remarks, that the Old Lady is as liberal as is consistent with safety to herself and protection to the public.

From Chambers's Journal.

ANIMAL INTELLIGENCE.

THAT animals have souls which are immortal, has been maintained by many writers long before Mr. Wood had entered on his present existence. Some of the following anecdotes respecting what some are pleased to call “brute beasts,” have been related to me by friends, the remainder are derived from my own observations.

The first I shall relate was told me a few days ago by a friend and a man of probity, and proves that a dog may be trained to perform acts which have very much the appearance of being the result of reasoning, and comprehension of the meaning of what is said to him. The friend in question was staying with a clergyman, and after the cloth was laid, the latter said to a sharp little terrier, who was stretched out comfortably on the rug before the fire, and watching with deep interest the preparations for dinner: “Billy, get your table-cloth!” The dog ran under the sideboard, brought out a copy of the *Saturday Review*, and spread

it on the rug. “What, Billy, can a dog of your sensibility eat a dinner off a paper which advocates prize-fights? and, perhaps, may encourage next a return to the practice of canine encounters?” If ever a dog protested against an imputation, that dog was Billy. He barked furiously, and seizing the paper in his teeth, he worried it as though he held an unusually strong rat in his mouth. When he had satisfied himself with this amusement, he shot under the sideboard again, and brought out a copy of the *Times*, which he held up to his master with an inquiring look, that seemed to ask: “Is there any objection to this?” His master shook his head, and said: “I am afraid its opinion on the subject of church-rates is not quite what it should be.” The dog seemed troubled by some misgiving as to whether it was, under these circumstances, a suitable table-cloth for a clergyman's dog; but, finding his master made no further remark, he proceeded to open it with great care and deliberation.

As soon as the mutton was placed on the table, a couple of slices were cut off and put on a plate, and laid on the table-cloth he had spread out. With an eager appetite Billy was about to begin his dinner, when his master said: "Ah, Billy, Billy, isn't it a sad thing to find the woman who cooked this dinner is a Roman Catholic!" Without a growl or a whine the dog turned away from the food, and retired to the furthest corner of the room, where he lay down with an air of resignation which a human being might have copied with advantage. After a minute or two, his master said: "Billy, I find I was mistaken about the cook. She is as good a Protestant as ever attended a May meeting." The joy of the dog at this intimation was expressed in the most emphatic manner, and the eagerness with which he attacked the mutton, was the strongest possible proof of the greatness of his previous self-restraint.

Some years ago, I was living in Hampshire, on the borders of the New Forest. Suddenly, the shopkeepers in the neighboring towns became aware that a good deal of counterfeit coin was in circulation among them, though they could give no hint where it came from. At last, a man, having the appearance of a small farmer, was detected in the act of trying to pass a bad half-crown. He was detained, and the constable was sent for, who, on his refusing to give his name and address, locked him up. The next day a man arrived from London, bringing with him a placard, issued by the government, stating that a gang of coiners had established themselves in the neighborhood of the New Forest, and offering a reward of a hundred pounds for their discovery and apprehension. The man in custody was induced by judicious manipulation to give information of the spot where his accomplices were concealed, and to serve as a guide to the constables. On getting within two or three hundred yards of the place where he said they were at work, he refused to go any farther, and as they were too few in number to spare a man to look after him, and any noise would probably disturb the gang, they did not try to force him, but relied on the reward being a sufficient guarantee of his good faith. The constables went cautiously forward; but when they arrived at the spot indicated, they could find no sign of an entrance to a cave such as had been

described. In vain they searched, and equally in vain they sought for the coiner who had led them there; he had disappeared, and they naturally concluded he had deceived them. This, however, was not the case. Three days afterwards, a boy who was looking after a herd of pigs, noticed them clustering about some object. He ran to see what it was, and found it was the body of a man, which the pigs had not dared to touch from fear of a nearly starved mongrel that lay with his paws across the chest of the corpse. The body was identified as that of the coiner, and the terrible condition it was in proved very clearly at whose hands it had suffered. A portion of the dress had been filled with red-hot coals; the head bore traces of having been thrust into the fire; in a word, a glance was sufficient to show that the wretched man had been subjected to the most cruel tortures. Several laborers and a constable were brought to the place, and as soon as they had recovered from the feeling of horror the spectacle awakened, they took notice of the peculiar actions of the dog. He ran from one man to another, catching hold of his trousers or his smock-frock, and trying to drag him in a particular direction. Neither kicks nor blows deterred the poor animal, and at last it occurred to one man, a little brighter than the rest, that the dog wished to lead them in pursuit of the murderers. Acting on this idea, they followed the dog along a path through the wood till he brought them to the very place which, the constable remembered, the dead coiner had pointed out as the spot where the cave existed in which he and his accomplices carried on their operations. The dog ran to a bush, and began tugging at it with all his might. One of the men took hold of it to assist him, when it came away, and disclosed a hole four or five feet deep, which ran in a slanting direction. The dog then began in the same expressive manner to call their attention to a thicket of underwood and ferns, a few feet from this entrance, too dense to be penetrated before a way had been cut with the axes of the woodmen present; but this having been done, a shaft, nearly a yard in diameter, was discovered. Shouts to those within to come forth received no reply, and those without had too vivid a recollection of what they had seen shortly before to descend into the cave. In this difficulty, somebody suggested it would be a good plan to

set fire to the dry ferns and under-wood, and throw it down the shaft. All this time the dog had shown a most intelligent interest in what was being done, and when he saw the flaming mass thrust down the hole, he stretched himself close beside it, regardless of the burning sparks which fell on him, and watched the men heap on the fuel with an expression of the most eager interest. No cry or sound was heard to issue from the cave, but when a man took a powder-flask from a boy employed in keeping the birds from a field close by, and threw it down the shaft among the burning embers, cries of agony followed the explosion. The dog, on hearing these, rose, walked deliberately to the hole, and looked down, wagging his tail all the time, as though he perfectly understood and rejoiced in what had happened. Then turning away, he trotted back with drooping head and a most dejected appearance to the dead body of his master.

A most ingenious method of poaching without risk was carried on by a poacher, through the agency of his dog, for a long time before it was discovered. The animal was a rather under-sized spaniel, and was trained by his master to set an iron trap, or gin, as it is sometimes called, by the pressure of its foot. When this trap had been placed in a part of the "run," where the game keeper was not likely to perceive it, by the poacher, the dog carefully noted the spot; and at dawn every morning, just when the night-watchers were on their way home, and before the head-keeper had come out for his morning walk, he visited each trap in succession, taking out the game where there was any in a way that effectually prevented its making further noise. The act of releasing the captive pheasant or hare, set the trap afresh, and at dusk he made a similar round, though he seldom brought any thing home on these occasions. The manner in which the discovery was made of this system of poaching by deputy, was through the habit of early rising practiced by a Captain Palmer, who lived on the outskirts of one of the woods visited by the spaniel. Walking through some low furze bushes, his attention was attracted to a hare by its cries; it was evidently caught in a gin, or was attacked by a weasel, or stoat, or some other animal of that species. He was pushing his way between the bushes in the direction whence the sounds issued, and had just caught sight of the

hare, when a spaniel rushed in upon it from another direction, seized it by the back of the neck, and putting his paw on the spring of the trap, released the hare, and started off with it at a rate which made pursuit hopeless. The whole thing was over in an instant. The captain was so struck with the proceeding, that instead of telling the keeper, and probably causing the dog to be shot, he contented himself with carrying away the gin, and making inquiries as to the owner of the spaniel. Having discovered it belonged to a man who supplied him with fish and many kinds of vegetables before they could be got from his own garden, he induced him to acknowledge the fact that the dog was in the habit of visiting the traps in the way described, and in obtaining a promise from him that he would discontinue the practice, on condition that he, the captain, did not inform against his dog, which would soon have insured its death. Whether the dog refrained from his evil courses in future, or merely pursued them in another direction, is best known to his master.

The instances of canine sagacity given above, though new, are by no means so wonderful as many that have been elsewhere recorded. The following case of the influence of supernatural terror upon a Newfoundland dog is of quite recent occurrence, and came out in the course of a trial at Thames Police Court of a steward for neglecting his duty. The man went on very well for a time after he came on board; but suddenly disappeared, and it was supposed he had jumped overboard. This was not so, however; he had merely concealed himself, and came out at night to get provisions. On one of these excursions, the dog caught sight of him, and the instant it did so, it dashed up on deck, rushed to the side and sprang into the sea, evidently believing it had seen the steward's ghost.

Anecdotes respecting foxes are universally interesting; there is so much sagacity in their operations, that the very fact of their being hunted should be a stronger claim on our sympathy. One pack of hounds had repeatedly dislodged a fox from a wood, and just as frequently lost him in a particular meadow. Sometimes the scent suddenly failed in one part of the meadow, sometimes in another, but wherever it happened, there was no trace of any hole or place where he could con-

ceal himself. So determined were the huntsmen to catch the animal that had so often foiled them, that meet after meet was fixed at the same spot, and the same wood drawn; the fox always going away at the first sound of the hounds among the underwood, and thus getting a good start, and invariably taking the direction of this meadow; till at last the farmer, to whom the cows feeding in it belonged, complained of their being injured by these frequent alarms. The secret was at last discovered by a boy, who had been sent by the farmer to drive the cows into a corner of the meadow when he saw the "field" coming. He saw the fox come through the hedge into the meadow, check his speed, look about him, and then rush towards a red cow and spring on its back, holding on so tightly with mouth and legs that the rushing hither and thither of the frightened animal did not shake him off. Similarly, another fox disappeared several times in succession in a rather deep brook, and every effort to get on the scent again was unavailing. It was at last found that he swam to a hole cut through the bank on which the hedge grew, and backed into it; and here he remained, with his nose just above water, till the hounds had been taken away to try their luck at another cover. Another, finding itself in imminent danger of being taken, scrambled into a carriage in which two ladies were seated watching the running of the horses and hounds. As the "field" was coming straight down upon them, the coachman drove on a little distance from fear that his horses would be frightened by the red coats and the noise. As soon as the vehicle was stopped, the fox, as if aware that it was not a safe refuge for him any longer, sprang out, and ran into a copse so dense that the hounds could only force their way through it with difficulty, and probably emerged from it on the opposite side, and made his escape across the country, for the scent was not recovered. Another fox, when hard pressed, managed to squeeze through a tall, quickset hedge, into a garden belonging to an old lady, where the hounds could not follow, and hid itself in the conservatory. As the lady refused to allow the animal to be taken out, the "field" were obliged to betake themselves elsewhere, very much to their disgust.

Two more anecdotes, taken from for-

eign sources, and I shall conclude what I have to say on the subject of animal intelligence on the present occasion. In *Le Nord*, it is related that a cook was recently greatly perplexed by the disappearance, day after day, of a cutlet or a steak from the kitchen-table when she was preparing the dinner. In each day's tale there was a deficiency of one. At last it occurred to her that, as the bell was rung every day while she was preparing dinner, and when she went to the door there was nobody there, there must be some connection between the two occurrences. Once this idea had entered her mind, she determined to satisfy herself on the point. The bell rang at the usual time, but instead of answering it, she hid herself in a cupboard. She had hardly done so before a cat rushed into the kitchen, sprang on the table, seized a cutlet in its mouth, and vanished. Her mistress was made acquainted with this felonious act on the part of the animal, and it was determined to set a watch to see who it was had trained it to this mode of robbery. The discovery was soon made. At the usual time, when the cook had her dishes arranged for the stove, the concealed watcher saw the cat creep stealthily towards the bell-wire, hook her claws in it, give it a furious pull, and then rush away kitchenwards.

The *Patrie* is the authority for the following: At one of the cafés on the boulevards they had a dog, which was a universal favorite. He was accustomed to fetch and carry, and one of his duties was to go with a basket to the baker's shop every morning for the rolls. One morning the mistress of the café found that a roll was wanting. The same thing occurred the next morning, and the attention of the baker was called to the error. As the deficiency continued, the baker unhesitatingly asserted that it must be the dog that stole it. A waiter was sent to follow the dog from the shop home; but the latter, instead of returning direct, took his way down a by-street, and entered a passage leading to a stable. Here he placed his basket on the ground, drew the cloth aside, and taking out a roll, he approached a closed kennel, from which the nose of another dog was protruding. His imprisoned friend took the roll in a quiet, undemonstrative way, as though it were a thing to which she was accustomed, and the dog picked up his basket and

trotted home. The waiter made some inquiries of the porter, and learned that the animal for whose sake the dog had committed petty larceny, had had maternal duties to perform towards three pups from the day when the first roll was miss-

ing. The landlady was so much interested in the matter that she would not allow the dog to be interfered with, and he continued to abstract the roll daily till his friend was in a condition to do without it, when he resumed his former probity.

From Blackwood's Magazine.

PERSONAL IDENTITIES.

"ONE of these men is genius to the other;

Which is the natural man.

And which the spirit? who deciphers them?"

—Comedy of Errors.

A VERY learned and able divine in a past generation once wrote a celebrated dissertation upon Personal Identity. It struck him as a very difficult metaphysical question, in which the affirmative had been somewhat insufficiently proved by those who had undertaken to maintain it. There is no intention on the present writer's part of reviewing either Locke's or Bishop Butler's theory; still less of plunging into any of the speculations of our German neighbors as to the *ego* and *non ego*. But looking at the question in the most commonplace view, it is very puzzling to a man occasionally to realize that he is himself—the self, that is, of thirty, or twenty, or even ten years ago. That such identification, in the case of others, should have its difficulties, is not surprising. To take a common illustration, the father of that thriving family, as he looks kindly upon the excellent wife and mother who presides at the breakfast-table, packs the boys' boxes for school, and scolds the servants, can not but find it difficult sometimes to realize that the lady is the same from whom he stole a glove or a bunch of violets (how many years ago?) which was but the beginning of a whole three volumes of real romance; indeed, in this case, it is as well perhaps that he should not insist upon verifying the undoubted fact too pertinaciously—better to keep that first image undisturbed by any retouching, as quite a separate picture in his memory, and allow it to have only a shadowy and mysterious connection with any flesh-and-blood reality

in his present establishment. It is very easy, and conjugally polite, to quote the graceful line which tells us—

"How much the wife is dearer than the bride:"

it may be true; but even the poet admits, you see, that the wife and the bride are two different persons, or how should one be dearer than the other? It is wiser for a woman to be content to have her former self loved and cherished as a separate thing, than to insist upon having it identified in every line and feature with the present. She might as wisely insist upon the waist-ribbon of eighteen recognizing the development of eight-and-forty.

But if it be difficult sometimes, in the case of those whom we associate with from day to day, to feel sure that they are the same whom we remember in their youth, it is very often almost as difficult in one's own case. Many of us must look back and remember a very different person who bore our name and occupied our place in the family genealogy half a generation back. We laugh at the little old woman in the nursery song, who had her petticoat cut short by an irreverent tinker, and entertaining thereupon the most serious doubts as to her personality, allowed her dog to decide the question in the negative—that "*I*" wasn't "*I*." No doubt, to the female mind, the proper length of a petticoat is a very important circumstance; and it is possible to conceive many modern ladies whose costume forms so important a part of their per-

sonality, that any sudden and serious reduction of it in their case might puzzle not only their little dogs and other admirers, but even themselves, in the matter of personal identification. But if we were all as honest and simple-minded as the little old woman of the story, we might often put the same question to ourselves with the same wondering amazement as she did. No need to refer to those terrible cases in which a man has plunged, either from sudden temptation or by gradual declension, into such a miserable corruption of his former self, that when he looks upon the contrast between what he was and what he is, he may well doubt the reality of the links which seem to connect the two. "Is thy servant a dog, that he should do this thing?" No need here to dwell upon this; it has always been found hard to believe that the murderer has ever been a little child, that the wretched dram-drinker you pass in the streets has ever been the plaything of an innocent household. But, putting aside with a shudder all such fearful mysteries of moral transformation, there is quite enough to puzzle us in identifying the past with the present, even in the commonplace lives of ourselves and our friends.

Those who grow up from childhood to old age in the same place, and very much amongst the same companions—in whose lives there have been no abrupt breaks either of position, or circumstances, or local interests—may have comparatively little difficulty in recognizing in themselves the same personal existence during all phases of their life. But with many—perhaps with most of us who are not blessed with territorial estates—there has been, at some time or other, very often more than once, an entire change of local habitation, of associations and acquaintances, and of general habits of life, even if not in any great degree of wordly circumstances and position. And when we look back upon that past life and its daily ways and occupations, which seemed to suit us then exceedingly well, and which, no doubt, had a very considerable effect in making us what we are now in character and feeling, and think how entirely separated from it we are now—how entirely we have become woven into the complex fabric of our present locality and surroundings—it is difficult to realize that it is not two distinct lives of two distinct individuals that we are regarding—

especially since years will have worked quite sufficient other change to make us feel, really and truly, that it is not altogether the same person that figures as the hero in both performances. There are some melodramas which every reader will remember, which suppose an interval of ten or twenty years to elapse between each act. The characters are the same from first to last, but the child in the first act becomes perhaps a wife in the second, and is found a widow in the third. And—inasmuch as there is a limit even to the best stage making-up—sometimes the child and the grown-up woman, whom the audience are to suppose the same, are played by two different performers. One could fancy that something of the kind takes place in the actual drama of human life; that the player we remember in those earlier scenes was not ourself, but some other whose life has passed on into ours in some strange way, but who is utterly gone from the stage, whose performance is entirely over, and who will never appear again in this present moral entertainment.

We must all be aware of a certain tendency to look back upon much of our past life as the acts and deeds of some third person, pitying ourselves with an almost ridiculous mental pathos for some remembered suffering of our childhood, and entertaining an unmerciful contempt and indignation for some piece of weakness or folly that we were guilty of in riper years. It may be true, as wise men tell us, (though not by any means so universally true as they would insist,) that we are blind to our own faults in the present; but at least we are not blind to them in the past: we often pass a very severe judgment upon them, as we do in the case of our neighbors, because in the retrospect we are no longer conscious of the temptation, and only think of the weakness and the evil result. In fact, the self whom we thus summon up for trial is not the self of today, but a different person; and therefore we look upon his acts and deeds with something like impartiality.

More especially does this feeling of separateness from our past life come upon us, when we go back to visit again, after an interval of long years, places in which we lived once, localities of which we knew almost every square foot, and which were associated with events quite as important to us as any of the events of the present. It surely was we who were there; yet it

can hardly be this present actual "we." It all seems to us now not like what it must be, if we come to calculate, a real past period of this natural life, but rather like some sort of previous existence. There is always a sadness in revisiting old scenes after a long lapse of time. Naturally enough; partly it is not pleasant to think how many years of our allotted life are gone, past recall; partly there is a kindly regret for some who shared with us the pleasures of those old days, and who will never share again with us any interest or pleasure belonging to this life. But perhaps, after all, the real sadness is, that we feel so little regret about it all; that our old interests are so dead within us, that our past self, which once moved and lived and loved in that old place, seems to us now so much a stranger; that what we can recall of its sayings and doings—and that is not a great deal, compared with what we have entirely forgotten—we recall with almost the calmness of a historian. Nay, let us not stop to question that old woman who passes, whose features are recalled to us by the associations of place, though somewhat a heavier share of toil and exposure has changed her even more than ourselves—never stop to ask her whether we are remembered or not; be content to recognize the natural fact that

"Year by year our memory fades
From all the circle of the hills."

The world does right to forget us when we hardly recognize ourselves. Regrets for the past—pensive memories of vanished years—are almost banished even from the poets of this modern, real, busy, rapid life. We must not lose the express by lingering five minutes too long in Dreamland. It is very well that it should be so. Life would be a misery to us instead of a blessing, if we allowed regrets for the past, merely because it is the past, to become any thing more than a sentiment.

Physiologists assert that our actual corporeal self undergoes a total change in the course of about every seven years; that a waste and reproduction of corporeal tissue are continually going on, so that the body of to-day is not the same body, in any one particle, that it was seven years ago, but an entirely new formation, moulded as it were upon the same last, and therefore presenting, in the main, the same appearance. If this be true, it was not we, af-

ter all, who were in those places and did those things in past days; only another likeness of ourselves, a similar combination of oxygen and what not else.

Even with this explanation, the identity of men from childhood to old age is not free from difficulties. There are some men whom it is very hard to imagine as babies. Dr. Johnson, for instance, or Dr. Parr—were they ever as other babies? Did the great lexicographer ever allow his nurse to contradict him, and was Dr. Parr born in a little wig? It is difficult to imagine the Great Duke ever whipped by a nursery governess; yet, if the common theory of growth and gradual development be true, it must be concluded that he was. One understands much better the feeling which led to the exhibition in some provincial museum of "Oliver Cromwell's skull when a child," which was looked at by many unsuspicious sight-seers with much reverence and curiosity. Naturally, the little Oliver died in the innocence of infancy, and the king-killer appeared first to men in the brewery at Huntingdon, with a skull already strong enough for the steel morion. An "infant Hercules" we have seen, and an infant Jupiter is comprehensible; but no doubt it was a strong appreciation of congruities in the Greek mind which represented Minerva as springing to light full-grown and full-armed. Venus might once have been a little darling; Mercury, we know, was a troublesome child; but it was impossible to conceive that goddess of wisdom even in the most classical swaddling-clothes.

And as to what we should be more right in calling our real self—our moral and intellectual essence—how are we sure that this is the same? The memory alone—and this in a somewhat marred and imperfect shape—seems to remain unaltered, and by this it is that we identify ourselves with the "I" of the past. The replacing theory harmonizes with actual experience much more satisfactorily in the case of our minds than of our bodies. We know that in many instances we are altogether changed—not developed or modified—in our spiritual elements. Our characters are often as entirely re-formed since our childhood or our early manhood, as we learn that our bodies have been. The child, it is said, is the father of the man; which is to say, that the qualities of the man exist, in their germs, in the child's

nature. It is very doubtful whether this theory is not formed upon striking and exceptional cases. And those who have written books upon the boyhood of great men, and so forth, find it convenient to forget—as indeed it would be very troublesome to collect—the vast majority of cases wherein the great men have been not at all remarkable as boys, and in which the wonderful boys have turned out any thing but great men. Certainly, in the case of one's own personal acquaintance, it is commonly an implicit faith in a chain of circumstantial evidence which induces us to regard them as the same persons we knew as boys—not any positive resemblance that we can trace in them now. Where these do exist, we point to them with a sort of pleased wonder, as a thing worth noting, that a man really does something, or says something, or likes and dislikes something, just as he did when a boy. "The same good fellow that he always was!" What a heartfelt testimony this is to a man's sterlingness of character, when it can be truly paid! of more real significance than if we were to remark in him the acquisition of some respectable quality which we had not fancied him to possess; that may possibly be adopted by a calculating prudence, the other is real and spontaneous. Nay, even a foible or a harmless weakness becomes respectable, if it helps to mark the man; so gladly do we catch at any countersign of identity. Mothers not uncommonly complain that their darling sons have been changed at school. Not meaning always positively for the worse, (for the pet of the home nursery is not always the sort of pet it is desirable to maintain for life,) nor yet always for the better; but simply that he is become quite a different being. And those who look on more dispassionately than mothers, see these changes come periodically. Sometimes they are very sudden and startling; and one understands how the superstition about changelings in the cradle grew up: it was a convenient exposition of the occasional phenomenon of a child turning out contrary to all natural expectations. One is almost tempted to think, even now, that these changelings are substituted occasionally, by some mysterious interference, in those who are long past their cradles. Such a theory may not be altogether comfortable, but it would explain a good many difficulties. Nothing else

will fully account for the total impossibility which we sometimes feel in recognizing the companions of our boyhood when we fall in with them in after life. That they should have become older and graver would be only natural; that they should also have become wiser would be, in many instances, very desirable. But that they should have become such entirely different persons—that there should be no trace of the boy left in the man—seems neither natural nor desirable. Nay, sometimes even if you come to question them upon old times, they appear to have forgotten entirely that previous state of existence. But for corroborating circumstances, you would be inclined to set them down as impostors, such as there have been cases of, who have passed themselves off upon affectionate relatives as long-lost children stolen or strayed in infancy: or have tried to palm themselves upon a loyal nation as suppressed princes, emerging from long years of forced obscurity. Even fond parents on the stage are supposed to depend entirely for the recognition of a child's identity upon a mole on the right breast, or, as in Dromio's case, "a great wart upon his left arm;" and really, when the entire *differentia* (to speak logically) between your own child and another's depends on the locality, marked down to an inch, of a natural blemish—when nothing is left of the old self that one can be sure of but a mole—the fact of this personal identity, even if you admit it, becomes hardly worth establishing. No; when it comes to that, the fond parent might quite as well adopt some promising young woman for a daughter, (whether with a mole or two more or less,) and look upon the lost infant as having become an inevitable gypsy; or, if in this case the maternal yearning may plead a natural instinct, in the case of your friend, at all events, if circumstances have changed him in character and feeling as well as person, it will be wiser and more satisfactory to look upon him as a mere recent acquaintance, and cultivate his society or not, as you please, according to his present qualifications, than to blind yourself by any religious faith in his identity with any one whom you knew in a different place and under different circumstances. If you can only swear to him by the mole or the wart, it were better not to risk perjury for the sake of so inconsiderable a relic of the past.

Nothing is more common in police reports than to read of adventurous heroes, who, having found it convenient, for private reasons, to change their domiciles and their occupation from time to time, have also changed their names, and figured under a successive *alias*. There is, however, in most of these cases, a uniformity of character and pursuit, under every variety of circumstance, which perhaps justifies the law in insisting on a rogue's identity. But in the more respectable world which seldom figures in police courts, it is much to be wished that this *alias* system were adopted and recognized. In the case of new-made peers and bishops, indeed, its convenience is already acknowledged. It does not require the disguise of a wig or a small apron to inform us that the man whom we used to address as "Jack Robinson" is not the same person as the prelate who now signs himself "John Cantab," or "John Wroxeter." But as it has now been ruled that there is no legal obstacle to a change of name, the practice might be adopted in many additional cases with advantage both to the individual and the public. It is done occasionally when a man is anxious to ignore all his antecedents; passing by all such half-measures as the substituting a *y* for an *i*, or tacking on an *e* final, we could point to popular preachers and rising barristers who have "made themselves a name" in the very literal sense. What the genealogists are to make of such cases, in future archaeologies, and how far they may complicate searches after missing heirs-at-law, is another matter. But whenever a man's self has become intrinsically changed by any outward change of position and circumstances, it ought to be lawful for his acquaintances, with or without his own consent, to change his name also. It should be at once conceded that for all purposes of life the old personality has disappeared, and that society agrees to recognize the new. "One man in his time plays many parts;" what right has an impertinent audience to mar the performance by loudly reminding the hero of the after-piece that he was the smart valet-de-chambre of the preceding play?

Therefore, disappointed lover, console yourself. The lady of your fancy, who has just married Calvus for his coronet, is not the same being who once returned your affection. *She* exists somewhere

still—like the lost Arthur, perhaps, in "faerie"—at least let her exist in your generous recollection. Do not confuse her image with any worldly-minded creature that has taken her place. Let that sweet musical interlude in your and her existence stand alone; do not insist upon tracing the fascinating *artiste* under the mask and rouge of the "grand spectacle" that is to follow. Possibly you will yet meet the lost one again; with as gentle a smile, as winning a voice, as sweet a nature as before—surely much more truly *her*, than one who has so lost all that makes woman lovely, that

"Twere perjury to love her now."

Courage, also, discarded friend. It is not the same man who walks about and takes no notice of you, even if he has borrowed the same skin and employs the same tailor. A proper name, a peculiar gait, a trick of speech and look, are not what makes a man. You knew your friend by some better token than that. He is gone. One of those accidents of life, that do separate friends as completely as death can, has come between you; be content to bear the separation; but never waste your time in blaming one who has no more identity with your friend of other days, than Damon and Pythias in the legend.

And, learn a little diffidence, O shrewd observer, who art a discernor of spirits. The man you think you "see through" is not the real man—no more than the ghost at the Polytechnic. The man whom you confidently pronounce hard and insensate has another self somewhere, full of heart and feeling. You have tested some nature thoroughly, as you fancy, and found it vain and frivolous; if you had the true Ithuriel's spear, you might have discharged that flimsy covering, and thrown light into a depth of soul that would have startled you. Who saw in that young guardsman, the "curled darling" of London life, the quiet soldier who shamed his hardier followers out of complaint in the cold and mud of the Crimean trenches? Who saw the heroes of the Indian mutiny in the Company's lazy officials? Who knows, at this present moment, the future rulers of America? Who recognizes the "coming man," until he comes? He is made, we say, by circumstances. Circumstances *do* change men; humiliating as the fact may be, we, the immaterial spiritual essences,

are at the mercy of a thousand material combinations of the veriest trifles in themselves. As an accident of our childhood makes us cripples or idiots for life, so the accidents—what we, at least, call accidents—of our position, our relations with others, our presence at a particular time and place, change us either into criminals or heroes. Possibly—if that will be any comfort to us—we have all a heroic self somewhere, ready to take the place of the very unheroic self we are conscious of to-day, if only circumstances call it into existence; possibly also, and quite as probably, we have a criminal self—a sleeping devil that wears our likeness—and that only waits the hour and the place to enter in and take possession of our personality.

Even our own identity is thus, as the learned bishop found it, a difficult point to establish. No doubt it has been held to be a test of sound intellects, that we should know ourselves to be ourselves, now and always, and not imagine ourselves somebody else. We call an unfortunate man a lunatic, and put him under surveillance, if he insists upon it that he was formerly Emperor of China. Yet, after all, shutting a man up is no infallible proof of lunacy; possibly, as a witty French writer has observed, the sane minority is put into confinement in order that the majority may fancy themselves rational. Pythagoras was no madman; yet he affirmed that he had been somebody else, and, as is said, gave what was held to be satisfactory proof of it. Elliston acted the king so often, that when wine had warmed his wits a little, he blessed his supposed subjects as cordially off the stage as on. A man will tell a story of personal adventure, wholly imaginary, until he comes to have a distinct recollection of having been an actor in it. Our Scottish friends have a notion that there are "double-gangers" about, and that a man may be, visually if not bodily, in two places at once. A French abbé wrote a treatise to prove that the bodily presence of one man in several places was possible, "according to the principles of sound philosophy." And most unquestionably, in that strangest of all mysteries, which would awe and bewilder us if it were not so familiar—the mystery of dreams—our bodies are resting for hours in the same place, while our spiritual or imaginative faculties (let us leave it to philosophers to distinguish them) are absent on the most distant and

chimerical expeditions. And it is only then that the old self reappears and takes its place in the old scenes, re-peopled with the dead and the past; and we are conscious, when we wake, of a double existence, as though past time and our past selves were still existing realities, and only separated from our waking senses by some conditions which we can not comprehend.

Adam Lyttleton, in one of his sermons, asserts that "every man is made of three *Egos*, and has three selfs in him;" a theory which that pleasant "Breakfast-table" companion, our American cousin Holmes, has adopted, whether consciously or unconsciously, and expanded in such original fashion as to make it rather more fairly his own than most modern ideas are. He says that "at least six different personalities may be recognized as taking part in a dialogue between John and Thomas; three Johns: 1. The real John, known only to his Maker; 2. John's ideal John, never the real one, and often very unlike him; 3. Thomas's ideal John—never the real John, nor John's John, but often very unlike either." And, in like manner, three several Thomases, one real and two ideal. If he had added that John's ideal John undergoes the most startling transformations, he would not have overstated this puzzle of personalities. The real John or Thomas, plainly, have no practical existence for any ordinary human purposes; the real self is out of mortal ken; *γρῶθι σεαυτὸν* was a mere bantering puzzle set by the philosophers.

There have been impostors, like the Count St. Germain and Cagliostro, who professed to have lived a succession of lives, and to have figured, under different names and different characters, in distant quarters of the world, or under successive dynasties. How far they had taught themselves to believe their own assertions, is even now a query. But many a man, if he were to sit down and write honestly that autobiography for which it is said that we might all find readers if it were so written in truthful detail, and were to write it in the telling fashion which fiction sometimes adopts, of showing a succession of striking *tableaux vivans*, dropping the curtain between each—if he were to set down his real thoughts and feelings, (or at any rate his own ideal of them,) his aims and thoughts, as well as his words and actions, at each distinct period—the

pictures he would show would never be looked upon as presentments of the same person, unless he were careful to inform us that they were chapters in the history of one man; the incongruity of the characters would revolt almost as strongly against our notions of identity, as the mysterious reminiscences of the charlatan contradict our belief in time and place.

There might be a new and entertaining series of "Imaginary Conversations" written, if we could but get the true data for them, between the New Self and Old Self of many persons, historical and unhistorical. At their first meeting they would not be more surprised at the outward difference in person, than at the utter unlikeness between their opinions and views of life, when they began their discourse. The individual whom the New Self fancies he remembers to have been, once upon a time, was not much like this apparition of Old Self, with which suddenly he is confronted. The childish self was neither so happy nor so innocent, the youthful self not altogether so foolish, as the present self pictured him. Each might make wise comments upon the mistakes of the other; and the balance of wisdom would not be always on the side that might be supposed. On the whole, if no unhappy circumstances had cast a gulf between them, and made them turn from each other with horror and mistrust, they would part, it may be hoped, good friends; recognizing each other's distinct good qualities, understanding better each other's feelings and shortcomings, and making allowance for them—as all good kind of people, even with less claim to identity, will do when they are brought together in personal intercourse—and ready to admit that each was best fitted for his own sphere of action, and had better confine itself to that, making as few disagreeable comparisons as possible.

Theirs has surely been a very happy lot in life, even if not a very eventful one, who can trace back its course without any such grave transitions as may lead them to doubt their own identity; who have never had cause to wonder in their own minds whether the self of to-day is the same as the self of yesterday. In this respect, no position would seem so fortunate as that of the English country gentleman, inheriting an old name and an old estate, and wise enough to set a just value on them. The scenes of his life, whether

joyous or solemn, are not the sudden shiftings of the theater, but melt gradually one into another, like dissolving views. Where he was born, he lives and grows old. The same familiar faces—friends, tenantry, servants—grow old around him, and he is hardly conscious of the change. His life may be a continuous whole; a harmony, more or less musical, not a succession of dislocated passages—fragments, as it were, from this and that—as some of our lives necessarily are. He need not know what it is to say farewell to pleasant neighborhoods, to give up cherished schemes, to bury some dead ambition, to shut and lock for ever (to borrow Napoleon's metaphor) the drawer which contains one long chapter of life's history, and to make, as we call it, a fresh start. "I dwell among mine own people," said the Shunammite—"a great woman," as the sacred chronicler has it; with a complete life, a continuous happiness and duty; who needed not to be "spoken for to the king," and to whom any change must be an evil. It is a very happy thing, and ought to be a very good thing, for any man with a true human heart, to have all his aims and interests gradually taking root in one place from his childhood—to feel, alike in joy or sorrow, in foreign travel or in domestic quiet, all his best thoughts and affections tend to one center, his English home, and that the hope of his forefathers, and the inheritance of his children.

But we can not all of us have the old hall and the paternal acres. Let us be content without them, venting any little envious feeling which may vex us in an honest malediction on the senseless prodigal who barter the home of his ancestors for a restless career of self-indulgent folly. For that large majority of us whose lives are set in no such goodly and substantial framework, but are a mere shifting diorama, still there is a gift, richer than any inheritance, which, if we have it, will give to them a unity independent of place or circumstance. It is what Southey somewhere calls "a boy's heart"—that freshness of feeling which is as a perennial spring of youth throughout life's successive changes; which cherishes old friendships and old memories, can recall old sorrows with a smile, and is never too grave or too grand to recognize the self of lighter hours or humbler circumstances.

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THE OCEAN OVERHEAD.

THAT there is an ocean above us as well as beneath us, is philosophically as well as metaphorically true; for as the waters of the sea cover a vast depth of rocks, and fill up immense intervening spaces, so the atmosphere in the opposite direction covers the sea and the land, spreads itself between and above mountains and hills, and fills up a vast space with air as completely as the sea does with water. There are, moreover, points of likeness in condition, for the air has its numerous currents as well as the ocean; its waves likewise, although they do not appear to the eye; and its tides, which may be traced to the influence of the sun and the moon. But there are few points of similarity in constitution. In this respect we can only notice contrast; for while water can be changed by heat from its liquid state into vapor, as we see every hour, air can not be correspondingly converted into a liquid by any amount of cold or pressure as yet known. Furthermore, while water can be compressed into any shape without resistance, air is a highly and permanently elastic gas, which although compressed and confined in any vessel, yet when it is again liberated, has a tendency to expand at the least diminution of pressure, and expands itself on all sides, and becomes lighter, bulk for bulk, in proportion to its expansion.

Both oceans are limited in depth, as is easily conceivable of the sea, which we know must have a bottom; and this, if we take the average depth of great oceans, has been calculated at about five miles. But it is not so natural to assume that the atmosphere has a very limited height. Hence, some have thought that it extends upwards indefinitely, an opinion, however, which is quite untenable; for it is highly probable that the ærial ocean has a height as defined as the depth of the aqueous one; a height which is not, indeed, materially bounded, but is a limit above which there is no air, no moisture, no clouds, and where any amount of air elevated from below would not expand in-

definitely and continually, but would finally (however dilated for a time) fall down upon the upper surface of the atmosphere, and then mingle with the inferior mass, as water lifted up from the surface of the sea finally falls down again upon it.

What may be the actual height of the ærial ocean it is impossible to say. Some have supposed it to be fifty miles, and others twenty miles, but mountain travelers and aeronauts have ascertained that the air in which man can breathe does not reach to ten miles, and probably not to eight, from the level of the sea. In accordance with recent experience of Mr. Glaisher and his companion, who in their balloon ascent of September 5th, 1862, may have attained to seven miles, that height appears to be nearly the limit of human vitality, and probably death would be the consequence of greatly exceeding it. Certainly there can be no such air as a man could breathe at about ten miles high—although a very light gas may float there. But without aeronautic experience, simple reasoning would conduct us to a similar conclusion; for the barometer supplies a direct measure of the rate of diminution in the quantity of air as we ascend from a given level, and thereby becomes a useful instrument for measuring the heights of mountains. When we ascend one thousand feet in height, we leave beneath us about a thirtieth of the whole mass of the atmosphere. Upon attaining ten thousand six hundred feet, (rather less than the height of Mount *Ætna*, which is ten thousand eight hundred and seventy-two feet,) we leave about one third of the mass beneath; and at the height of eighteen thousand feet, (nearly that of *Cotopaxi*), we should have passed through one half of the ponderable body of air weighing upon the surface of our earth. At the lesser and more familiar height of the summit of *Mont Blanc*, which is fifteen thousand seven hundred and eighty-four feet, the sensations of mountaineers are very painful owing to the levity of the air; the head is oppress-

ed as though with a heavy weight, and respiration becomes difficult, while the faces of many become livid; and the danger of being frost-bitten is not slight—owing to the decrease of temperature in proportion to elevation.

PRESSURE AND WEIGHT OF AIR.

We should dread instant death by being placed under the weight of the aqueous ocean, which, as we know, crushes in the sides of any collapsible body; but we seldom reflect that we do really live at the bottom of an aerial ocean, the weight of which must be immense. Doubtless our bodies would be crushed in by it, as hollow vessels collapse when sunk deep in the ocean, were it not that the elasticity of the air is an effectual and perpetual counterpoise to its pressure. And it seems probable that the weight of the superior ocean acts conservatively upon the surface of the inferior one, so that the pressure of the atmosphere prevents the too rapid evaporation of the waters of the sea: This pressure, too, is the cause of the liquid state of certain bodies, which, apart from it, would have only a gaseous existence. Not only, therefore, do we walk safely, and breathe freely on the bottom of an aerial ocean which is ever exerting a great pressure upon us, but that very pressure is the condition of our existence, and the cause of certain conditions of existence in other bodies.

What is the actual pressure and weight of the air, and how do we ascertain it?

The height of the barometer is nearly thirty inches, (29.95 at London,) and there is reason to believe that this is the mean pressure of air over the surface of the globe. In another form of expression, the weight of a column of air extending upwards to the extreme limit of the atmosphere, exactly equals the weight of the column of mercury in the tube of a perfect barometer. Therefore the weight of the entire atmosphere is equal to a sea of mercury which should cover the surface of the globe to the depth of about thirty inches. Hence the pressure of the air upon each square inch is equal to nearly 14.6 lbs. avoirdupois, or 58,611,548,160 lbs. upon every square mile. From this, we estimate the pressure of the air at about eight ounces avoirdupois for every inch of mercurial elevation in the tube of the barometer. With these data we shall

find little difficulty in calculating the absolute weight of our entire atmosphere, which, after Pascal's computation, may be given as equal, in English notation, to about *eleven trillions of pounds*; a sum which the mind can not possibly grasp. The only popular and appreciable form of computation is that of Dr. Cotes, by which the weight of the whole mass of air is equivalent to the weight of a globe of lead sixty miles in diameter. How few know, or reflect, that we live underneath such a weight of air! Let us only remember that every minute we are breathing in and under a load, which, when reduced to and expressed in figures, passes our comprehension.

AERIAL CURRENTS AND WINDS.

If the mass of our atmosphere remained at all times in what is theoretically conceived to be its normal condition, namely, a perfect balance of its parts, (statical equilibrium,) there would prevail a dead aerial, as there often is a dead oceanic calm. But a series and succession of disturbing causes prevent such a calm. The chief of these is solar heat, which acts daily and strongly through our atmosphere while the earth revolves; and to this powerful agency, in combination with its negation, or cold, and also with gravitation and electricity, may be ascribed most of the atmospheric changes of which we are aware. It is probable that more is due to electricity than we have been hitherto accustomed to acknowledge, and much also to the influence of the moon; but at present we may refer to solar heat as the principal disturbing agent in the mobile and expandible body of air around and above us.

Currents in the sea, as we have hinted, have their equivalents in the currents and winds of the atmosphere. Every disturbance of the balance existing in neighboring masses of air, whether it arise from an increase of density, and consequently of pressure, on the one side, or from a diminution of density and of pressure on the other, immediately occasions a movement from the heavier air in the direction of the lighter; in the same way as water is put in motion when it suffers a greater pressure on one side than on the other. Unequal heating is the commonest cause of disturbance of aerial balance. The air takes its heat chiefly

from the surface of the earth, and as the warmed and expanded air rises therefrom, the heat of the soil is spread over the higher regions of the atmosphere. That which rises most rapidly over the warmest spots, is replaced by air rushing in from cooler places, and thereby those movements are set up which are generally found on the borders of forests, in the shadow of trees, and at the openings of shaded mountain glens, as well as in valleys, on the banks of rivers and lakes, and on the sea-shore.

But let us view similar operations on a large scale. Conceive the torrid zone of our globe to be considerably heated, while the polar regions are cold, and thereupon a process ensues like that of the boiling of water. First the heated portions of the water rise, while the colder portions take their place. The former, which are now chilled, though previously warmed, again descend as they find their way, and thus a circular rather than a vertical course ensues. In like manner the warmed mass of air at the torrid zone, which is vastly greater than the cold mass at the poles, is set in motion and necessarily proceeds. Probably a very considerable portion of the air near the equator descends just beyond the tropics, and there makes its way between opposing polar currents, or else under or over them towards the north and east, while another portion turns southward in the calm variable latitudes, and contributes to the perennial *trade-winds* which may not be sufficiently maintained from the comparatively small polar regions. The polar current having gained force after an interval, approaches, either suddenly with a great conflict, occasioning storms or lightning or hail, or more gradually, causing only a change from southwest through west to northwest, and afterwards again by north to east.

The course of such currents will enable us to understand the origin of powerful winds. The *trade-winds*, the direction of which is never changed; the *monsoons*, whose direction is changed periodically, and the so-called *variable winds* of higher latitudes, have all been referred, by the help of what Professor Dove calls the "Law of Gyration," to one common general principle, and it is therefore not unreasonable to suppose that in the more violent disturbances of the atmosphere

certain general conditions exist which are common to all these winds, both as relates to their origin and to their subsequent course—even while they present many varieties in appearance.

The ordinary condition of our atmosphere seems to be that of a mixture of currents between half a mile and five miles upwards from the surface of the earth, and these currents vary in temperature, tension, electricity, direction, force, and moisture. Heat from near our earth probably does not reach upward beyond the range of tropical currents, which may range from two or three miles in general to three or four miles less frequently. Above, below, or between those warmer currents, there may be cold or cool polar winds; and above all these there may exist excessively cold space, with proportionate electrical tension.

When we experience the cheerful warmth of the sun, it is difficult for us to imagine that by ascending higher *towards* him, we should be not warmer but *frozen*. Yet such would be the consequence of attaining the extreme coldness of lofty space. The last registration which was made during Mr. Glaisher's balloon ascent on the 5th of September last year, just before he lost his consciousness, was ten inches, and this was in the extreme cold of *fifty-seven degrees below freezing-point*.

CLOUDS, FOG, RAIN, ETC.

To the heating of air and its consequences in currents must be attributed many of those atmospheric phenomena with which we are most familiar. Clouds are merely condensed vapor held between lower and higher temperatures. They are never stationary, although they often appear to be so. Sometimes in Alpine excursions, we are disappointed to see an apparently moveless cloud wrapping the summit of a lofty mountain, and remaining upon it as many days as we remain in annoyance below it. In reality, however, every particle of such a cloud is in ceaseless motion, and there is a continual succession of atoms, which may be observed through a good telescope, while to the ordinary observer the cloud seems unchanged.

Clouds float sometimes in one current, and at other times in another. Occasionally also they remain between two cur-

rents. Were it not for crossing currents, with changes of temperature and of their electric conditions, only one kind or form of clouds (*stratus*) would appear. It was hence found by the aeronautic observations of Welsh and Glaisher that depths or masses of cloud may exceed two thousand feet, or a third of a mile continuously, without the presence of any other cloud above this thickness. No trace of a cloud has been observed at a greater height than seven miles.

Fog is the moisture of warm earth evaporating into cold air. It resembles the steam of warm water greatly magnified, surrounded by air too moist and cool to permit further evaporation, but not cold enough to cause it to become condensed in rain. Different effects follow from varying degrees of heat and condensation. Heat radiated upwards, and cold air in the higher regions, cause the suspension of vapor in the air until one predominates, and greater or less precipitation follows. The clouds that hang over us pile upon pile, the fog that throws its impenetrable veil over a town or a city, the mist that overspreads the course of a long river, or the lighter mist that floats over a green meadow, are all vapor more or less condensed, and in chemical constitution are identical.

Greater or more rapid condensation of vapor results in rain, snow, or hail. Dew also is simply the vapor of air condensed by contact with a body colder than itself. At sunset the earth's surface becomes so cold by radiation of its previous heat, that the warm vapor of the air is chilled, condensed, and descends in dew. In rain the drops fall from a considerable height, while in dew the condensation takes place near the earth's surface.

HAIL.

It may appear difficult to account for the formation of hail and large hail-stones in such a body as the atmosphere, but Professor Dove has suggested that a grain of sleet first formed at a great height in the air, may make several revolutions in an inclined whirlwind, and during its passage through cold and hot strata alternately, obtain that shell of ice which covers the grain of sleet, like a grain of snow, in the center, until it becomes so heavy that at last it falls to the earth. This seems a probable theory, and would

account for the noise which generally precedes a heavy hail-storm, and which is due to the rotating motion of the hail-stones before they fall. "Such hail-storms," says Dove, "and many severe thunder-storms, present the striking appearance of a long, almost horizontal column of clouds, which is rolling on, and when projected on the sky appears more or less bent. At times the dark bank of clouds covers itself with a number of brighter stripes of grayish clouds, which envelop it, as a waterfall does the cliff over which it falls. The edges of the whirlwind seem to favor the formation of hail, in consequence of the fact that the circles described by the hail-stones are largest, and consequently the difference of temperature which they have to pass through is greatest. It has been very often observed that the district where hail fell, whose breadth is never great, has been double, with a district in the middle where it has only rained. The reference of the formation of hail to the whirlwind explains the fact that the boundaries of the hail district are very often clearly marked."

The most destructive hail-storms seem to be of great length but little breadth, and quite in accordance with Dove's view was the great hail-storm which passed across France on July 13th, 1788. It marked two parallel tracts respectively of one hundred and seventy-five and two hundred leagues in length. Yet these were in breadth only four leagues in the one case and two in the other. In the separating breadth of five leagues only rain fell.

The size of the larger hail-stones varies greatly, and although some of considerable dimensions occasionally fall in England, nevertheless those which fall in India are (according to Dr. Buist) from five to twenty times larger, and often weigh from six ounces to a pound. It is difficult for Englishmen to credit Dr. Buist when he adds that these stones are seldom less than walnuts, and often as large as oranges and pumpkins! When these fall the storms are almost always accompanied by violent wind and rain, and by thunder and lightning.

Some hailstorms in our own country have been very remarkable. In April, 1697, one passed over Cheshire and Lancashire, the course of which was two miles broad and sixty miles long, and

which sent down hailstones weighing eight ounces, and measuring nine inches round. On the 4th of May of the same year a shower of hail fell in Hertfordshire, after a thunderstorm, the hailstones measuring fourteen inches in circumference, and killing several persons. It is curious that on the 4th of May, 1797, that is, exactly a century afterwards, another hailstone was seen in Hertfordshire which measured fourteen inches in circumference.

There is reason to think that hailstones may be forced together so as to form aggregates, which should be regarded as masses of ice rather than single stones. Thus a hailstone which measured six inches in diameter fell near Birmingham in June, 1811, and it resembled a congeries of masses, about the size of pigeon's eggs, agglutinated together. In the summer of 1815, during a thunderstorm at Malvern, in Worcestershire, hailstones fell as large as walnuts, and in some places to the depth of several inches. In August, 1828, pieces of ice fell at Horsley, in Staffordshire, some of which were three inches long and one broad. In 1826 a mass fell in Candeish which must have weighed more than one hundred-weight, and which was some days in melting. In 1832 a lump fell in Hungary of no less than a yard in length and nearly two feet in thickness, and if we can credit the account printed in the *Ross-shire Advertiser*, there fell in August, 1849, a block "of irregular shape, nearly twenty feet in circumference," on the estate of Mr. Moffat, of Ord, immediately after an extraordinary loud peal of thunder. This mass is said to have been composed of lozenge-shaped pieces from one to three inches in size, and firmly congealed together. We may perhaps attribute the formation of such large masses of ice in the atmosphere to the reassociation of fragments upon a principle which has been expounded to philosophers under the name of *regelation*, and which resembles a welding together of pieces of ice under considerable pressure.

The destructive force of hailstones is owing to the height from which they fall, and probably to the whirling momentum imparted by the rotary storms which accompany them. We all remember particular instances of their injurious effects. One of the most appalling storms on record was that of August 1st, 1846, when hailstones weighing from one to two ounces fell in London, and destroyed a

great amount of property in Buckingham Palace, Westminster Hall, and other buildings, while the loss suffered exclusively by gardeners was estimated at £15,000. Large hailstones do not, however, fall so frequently in this country as in India, North-America, and the South of Europe. In mathematical form, Sir John Leslie calculated the destructive force of a hailstone as equal to the fourth power of its diameter.

LIGHTNING.

The accumulated electricity which is discharged from meeting clouds is commonly recognized as lightning, and thunder is the noise caused by the successive discharges of such accumulated electricity, or the concussion of the air when it reunites after having been divided by a flash of lightning. We are all so familiar with the ordinary appearances and effects of lightning, that to dwell upon them would be superfluous, while to enter into minute details on the questions of scientific interest connected with them would carry us far beyond our present limits. In this country the month in which these pages appear is frequently marked by thunder-storms, and we are visited by them at intervals during most years; but in the high latitudes of the northern and southern hemispheres, thunder-storms are almost wholly unknown, and it is believed that they are of very rare occurrence over the ocean in the middle latitudes when distant from continents. On the other hand, there are localities where, during certain months of the year, thunder-storms are periodical phenomena of daily occurrence. For example, in the Port Royal Mountains, in Jamaica, such storms occur every day about the hour of noon, from the middle of November to the middle of April.

A flash of lightning differs only from the spark obtained from an electrical machine in the amount of its force. Its course is uncertain, but it chiefly seeks such things as are good conductors of electricity, as metals and water, avoiding non-conductors. When a flash has passed through a body which is not a perfect conductor, the smallest possible hole or mark is made visible; although in other parts of its course the same flash may have shivered a tall tree or the mast of a ship. A good conductor must be so

placed as to rise high above the highest point of the building, and must run down in unbroken metallic connection to the earth, or to running water, presenting to these the greatest possible number of points, so as to favor the escape of electric fluid. When the metallic conductor is of sufficient thickness and properly placed, lightning will not quit it, though the conductor may lie directly upon wood or stone, or may pass through water, or even if a man should grasp it with his hand; for the stroke passes through a perfect conductor without leaving a trace of its passage. Even though gunpowder may be placed around a metallic conducting rod, the passing lightning will not kindle it. Hence good conductors are perfect protectors of powder magazines.

The apparent interval between the flash of lightning and the commencement of thunder has been known to vary, in different cases, from less than a single second to between forty and fifty seconds; on very rare occasions it has exceeded fifty seconds.

Forked lightning is perhaps divided by its approach to particular terrestrial objects, and a zig-zag flash takes place when the lightning adopts the course of least resistance. In rare cases zig-zag lightning forks or returns upwards.

Globular lightning, or balls of fire, present remarkable appearances, which should be carefully noted by observers. They are known to be of the nature of lightning from the damage they have inflicted on ships or buildings struck by them; but they differ from ordinary lightning not only in their shape, but by their slow motion and the length of time during which they are visible. Sometimes they occur, as has been reported, without the accompaniment of a storm, and even under a perfectly serene sky.

WHIRLWINDS.

While in Britain during the month of August we are basking in the heat of an often cloudless sun, and luxuriating in a calm atmosphere, the inhabitants of the West Indies are particularly liable to hurricanes, which have most frequently desolated those islands in August, their principal seasons for hurricanes extending from August to October. In the Indian ocean, however, these visitations are most common from December to April.

We may advert to the special character which during recent years has been found to appertain to many, if not all hurricanes, namely, that they are revolving storms, or literally *whirlwinds*. The same meaning is expressed by the term *cyclone*, (Greek,) now generally applied to them. We can not venture to assign a producing cause to cyclones.

Whirlwinds advance towards the poles obliquely, but blow in opposite directions in the two hemispheres, although they maintain a determinate course in each of them. The manner in which they move onward is not simple, nor easily described without diagrams, for a double motion marks them in both hemispheres. The speed at which they advance is the mean velocity of the progress and rotation of which their motion is compounded. Such speed is sometimes very high, as in the case of the first hurricane of August, 1830, in the West Indies, which advanced at the rate of five hundred miles a day. The storm of 1831, at Barbadoes, rolled at the rate of three hundred and eighty-three miles a day over a space of twenty-three hundred miles. The Rodriguez hurricane of 1843 advanced at the rate of about two hundred and twenty miles near the equator, but only at fifty miles as it approached the tropic of Capricorn. A tempest in our own country in November 25th, 1838, swept on at the rate of about twenty miles an hour.

The rotatory, regarded as distinct from the onward motion, is subject, as already said, to ascertained laws. The main principle of the course of a revolving gale must always be remembered to be this: The direction of the wind in the northern hemisphere is from east by north to west, and from west by south to east, or contrary to the movements of the hands of a watch. On the contrary, in the southern hemisphere the rotation is from east by south to west, and from west by north to east.

The rotation of such storms is not strictly circular, but rather cycloidal, and thus the word *cyclone* exactly designates it. A diagram would show it to be what is familiarly known as an eddying or corkscrew motion. The gyrating axis, or axis of revolution of a hurricane is supposed to be inclined forwards in the direction of its motion, the lower part being retarded by the resistance of the surface of the earth. The lulls and gusts which alter-

nate in the vortex of the storm may arise from an oscillation of this axis. The diameter of a revolving hurricane varies greatly. The largest diameter of a hurricane in the northern part of the Indian Ocean is estimated (by Thom) at six hundred miles.

Different observers describe differently the frightful noises heard at the center of cyclones. "An awful silence," says one, "was followed by an awfully hollow and distant rumbling noise." Biden states that the gusts which succeed it are "like to successive and violent discharges of artillery, or the roaring of wild beasts;" and Cattermole notes "a continuous roar in the air." Piddington observes that the usual expressions for waterspouts are "rumbling and hissing," while for cyclones they are "roaring, thundering, yelling, and screaming."

Two notable storms which raged on October 25-26 and November 1, in 1859, and which, from the loss of a large vessel of that name, are known as the "Royal Charter Storms," were the result of a cyclone.

It is supposed that on this memorable occasion, the central area of a great cyclone passed over the middle of the British Islands. On the morning of the day (26th October) upon which the Royal Charter was driven against the north coast of Anglesea, the cyclone advanced from near the entrance of the channel, where it had raged on the previous morning; and on the following day (the 27th) its circuitous sweep affected the North Sea, having crossed Lincolnshire. It was still traceable after the 27th, though less determinately, towards Norway and the Baltic, gradually widening and thereby diminishing in power. This most violent cyclone, one of the most violent indeed which has passed across these islands, has thus been very carefully traced from its first indications through its rotation during three days and nights.

GENERAL REFLECTIONS.

Even such a limited account as we have now given of the ocean overhead must impress the reader with the astonishing evidences which it displays of power, design, adaptation to man's condition, and benevolence upon the part of that Almighty Being who sits enthroned in the highest heavens, while the clouds are

the dust of his feet; who is encompassed by obedient winds, veiled by awful lightnings, and unmoved by fiercest storms! That all these are the messengers of his will and instruments of his power is a familiar thought; but there are other kindred thoughts by no means so familiar. All these elements and phenomena are, through his contrivance and benevolence, also made subservient to the comforts and necessities of man, and in this light the wonders of the ocean overhead are even greater than those of the ocean below us.

Consider only the conveniences, compensations, and skillful adjustments of the conditions of our atmosphere, to say nothing of its chemical constitution. Over us lies an enormously heavy mass, whose perpetual pressure is rendered nearly insensible to us, and we know it not until we contrive to measure it. Through it winds blow from all quarters and in all degree. A zephyr fans us, a gust purifies us, a gale sweeps a whole country clean; sea-breezes invigorate us, strong winds fill our sails and promote our commerce, and equatorial and polar currents keep up interchanges in accordance with discovered laws. In this vast aerial body nothing stagnates, nothing is useless, every thing circulates, temperature is equalized, warm air is transferred to colder regions and cold to warmer ones. Mobile, permeable, and elastic, it is open to the sunbeams, free to heat, unimpaired by cold, receptive of moisture, the storehouse of rains, and the gentle depositor of softening dews. It is a groundwork for the gorgeous mountains of cloud-land, a stage for the display of the most varied and swiftly shifting scenery of sunlit vapors, and a pure medium for the inimitable and ever-admirable rainbow.

Though apparently the subject of all kinds of caprices in wind and weather, yet the more we study it the more do these caprices diminish, and laws take their place. "As uncertain as the wind" is a proverbial saying, yet in this respect few things are more certain than some winds, and nothing is more advantageously regulated. The great trade wind circulates round the globe where the ocean is widest, and then lays out, as it were, upon the waters a great highway for communication between the most distant places. Where it is needed there it is always to be found, while the steadiness of its declinations from the fundamental

course renders it not less serviceable in the same parts. Within the range of these winds, and through their assistance, the navigator can accomplish nearly all he requires; and when they become fugitive, the very shores which he desires to sail along or reach act upon them to produce variable and local winds to aid him.

To discover design in organized existences is now an ordinary result of study, but who thinks of discovering it in atmospheric phenomena in the clouds and in the winds? Yet one of the oldest of reli-

gious observers of nature had true philosophy enough to make such a discovery, when he exclaimed in language not less correct than sublime, "Out of the south cometh the whirlwind: and cold out of the north. By the breath of God frost is given: and the breath of the waters is straitened. Also by watering he wearieth the thick cloud: he scattereth his bright cloud: and it is turned round about by his counsels: that they may do whatsoever he commandeth them upon the face of the world in the earth."

THE HON. RICHARD COBDEN, M.P.

THE name of this eminent British statesman is doubtless more familiar to our readers than his strongly marked and expressive countenance, a finely-engraved portrait of which we beg to introduce to their attention in this number of the *ECLECTIC*. In doing this we hope to impart a personal gratification to numerous friends who have long watched the progress of this distinguished member of the Imperial Parliament, whose talents, character, and public services command respect on both sides of the Atlantic. We beg to add, that this attractive portrait has just been engraved for the *ECLECTIC* by Mr. Perine, from an accurate photograph of the original taken a few weeks since in London. This fact may add interest to it as a work of art, and the pleasure of possessing a good likeness of an eminent man. It will be sufficient for our present purpose if we give a brief outline biographical sketch of Mr. Cobden, to accompany the portrait and illustrate in part his personal history and public life.

THE HON. RICHARD COBDEN, M.P., was born at Dunford, near Midhurst, in Sussex, England, in 1804. On the death of his father, the son while yet young was taken in charge by his uncle, who kept a wholesale warehouse in London, and who placed him in his establishment. He began his business life at Manchester, and soon after for commercial purposes visited Egypt, Greece, and Turkey in 1834, and in 1835 came to the United States. He was one of the founders of the Manchester Athe-

naum, and delivered the inaugural address.

In 1837 Mr. Cobden traveled in France, Belgium, and Switzerland. In 1838 he made a journey in Germany. Soon after his return to England, at a meeting of the Manchester Chamber of Commerce, he advocated the repeal of all taxes on grain, and carried a petition to that effect, addressed to the House of Commons, and very numerously signed. In 1839 about two hundred delegates brought up to London a vast number of petitions for the repeal of the Corn Laws. In 1841 Mr. Cobden was elected member of Parliament for Stockport. After the establishment of the Anti-Corn-Law League, that body, on the 20th of October, 1842, announced its intention of raising £50,000, for the purpose of sending lecturers to every part of the country, and of spreading information on the effects of the Corn Laws, by means of pamphlets, etc. Mr. Cobden became one of the lecturers; he attended public meetings throughout the country, and also occasionally in London, and was distinguished above all the others, not less by the extent and precision of his information than by his acuteness of reasoning, his boldness of declamation, and his popular style of oratory. These qualities also gained him much influence in the House of Commons, where he often spoke in support of his object. The struggle for the repeal of the Corn Laws was terminated by Sir Robert Peel's memorable speech, and by the royal assent being

given, June 26th, 1846, to an Act for repealing the duties on the importation of foreign corn.

Mr. Cobden, soon after the passing of the Act, set out on a journey on the Continent, and visited successively France, Spain, Italy, Germany, Russia, and Sweden, and was received with great applause at meetings in the principal cities and towns. During his absence in 1847, he was reelected member of Parliament for Stockport, and also for the West Riding of Yorkshire, which he preferred and chose, and continued to represent for a course of years. After the repeal of the Corn Laws his political friends set on foot a subscription to remunerate him for his services, and the large sum of £70,000, is said to have been collected and given to him. Mr. Cobden, as a member of the Peace Society, took an active part in the congresses of Paris in 1849, at Frankfurt

in 1850, and in London in 1851, in advocating and supporting the principles of non-intervention and of the prevention of war by arbitration between the States interested. Mr. Cobden has written and published various pamphlets expressive of his opinions on the subjects which he has advocated. We have not room to trace the public labors and eminent services of Mr. Cobden in more recent years, nor is it necessary. What he has said and what he has done in Parliament and out of it, by his great personal influence, and addresses for the benefit of the public, forms a large chapter of current English history. One of his grandest and noblest achievements is the bold and salutary lesson which he administered to the London *Times* in December last, as a just rebuke to the editor for his misrepresentation and injustice to Mr. Cobden.

From Chambers's Journal.

THE MONTH: SCIENCE AND ARTS.

THE New Year is a month old; and eighteen hundred and sixty-four is rushing away from its first fresh weeks as swiftly as any one of its predecessors. In this busy tide of human life in London it seems already long ago since Taunton greeted Captain Speke with a public dinner and cordial speeches; since the Christmas books were a novelty on drawing-room tables; since meteorologists all over the kingdom were sending paragraphs to the newspapers about the extraordinary mildness of the season, and the number of flowers in bloom; since the friends of Cooke and Millais were congratulating those two worthy artists on their elevation to R.A. from A.R.A.; and since a mournful throng followed to the grave in Kensall Green Cemetery the mortal remains of W. M. Thackeray. A little month has passed, and new topics are pressing for attention; Parliament is about to begin its annual talk; and in the stir and bustle it seems as if the incidents of Christmas-tide were forgotten. But the great stream has an undercurrent;

and there are found those who think and remember; for whom last year's experience will become this year's salutary discipline, encouragement, or warning.

The Astronomer-Royal, in a paper read before the Royal Society, supplies us with some interesting particulars and views of terrestrial magnetism; in itself one of the most interesting subjects of modern science. By a discussion of all the magnetic storms, one hundred and seventy-seven in number, observed within a given period, 1841-1857, he is enabled to draw certain conclusions, to point out some laws of the phenomena, and suggest a theory to explain them. Any one who has noticed the swirls and eddies of water in confined channels traversed by different currents, as among islands, or who has paid attention to the movements of the atmosphere in tempestuous weather, may form a notion of the theory suggested by Mr. Airy. He shows that in air and in water the general type of irregular disturbance is traveling circular forms, with radial or tangential currents, and sometimes with increase

or decrease of vertical force in the center; and arguing from these he assumes the presence of a magnetic ether or fluid as an envelope of some feet in thickness over the surface of the whole earth, which, being affected during magnetic storms in the same way as air and water are, occasions the phenomena which have long been regarded as the most interesting in observations of terrestrial magnetism.

Whether Mr. Airy be right or wrong in his theory is a question which magneticians every where will be ready to discuss. Meanwhile he points out a way in which the question may be answered, namely, by careful observations with apparatus identical in construction at five or six observatories within the limits of Europe. This would be a practical way of testing the theory which we should be glad to see applied.

The Geological Society have read and discussed papers on fresh discoveries of fossil teeth and bones in Central India, and "On the Recent Geological Changes in Somersetshire, and on their Date relatively to the Existence of Man and certain of the Extinct Mammalia." The latter was communicated by Sir Charles Lyell, and was listened to and talked about in a way that showed how lively an interest on such questions prevails among geologists. They have had also further communications concerning the earthquake at Manilla, mentioned in a former number of this *Journal*, from which we learn that two hundred and eighty-nine persons were killed by the shocks, and a large number more or less injured. Facts so grave as these enable us to form a notion of the violence of the convulsion. Compared therewith, the earthquake that alarmed England in October last was but the jolt of a wagon.

In connection with geological subjects we may mention the discovery of ancient relics which was made a short time since near Rosebury Topping, a high hill of the North Riding, that looks into the vale of Tees. The district is much cut up by excavations for ironstone; and in making a new roadway at about fourteen feet below the modern surface, the diggers came upon fragments of pottery, broken querns, bones of animals, and, as is said, part of a human jaw containing three teeth. The bones comprised those of oxen, deer, and sheep, the last so small in size as to lead to the inference that a diminutive

breed of sheep once inhabited Cleveland. All the marrow bones are broken in two, which may be regarded as evidence that aboriginal Britons, after picking off the meat, knew how to get at the marrow. One of the smaller bones has been bored, probably that it might be suspended by a string, and among other things which showed signs of handiwork, were pegs of wood and bone, and a jet ring. Jet, as some of our readers will remember, has been dug out of the cliffs of Cleveland from time immemorial. No weapon or implement has been discovered, but there are a quantity of sticks, twigs, leaves, nuts, and acorns, and a considerable bed of mussel-shells, all of which have been opened. Neither are there any signs of a dwelling: hence it is questionable whether the deposit has been formed at the bottom of a pool, or under huts raised on piles. The date of these interesting relics is as yet uncertain, but it must be assigned to the Celtic period. There are archaeologists enough in Yorkshire to investigate this point, and we hope to hear of their taking it up with spirit. We conclude our brief notice with the statement that the human jaw is described as remarkably massive and large, as if it had belonged to a person of huge proportions. And that "the three teeth, which are still in their sockets, are of great size and very much worn down; indeed, nearly the whole crown is worn away; a fact which testifies plainly enough to the coarse nature of a very considerable portion of this ancient man's daily bread."

Metallurgists, and all others who have to do with iron, will be interested in hearing that Mr. Sorby has succeeded in making microscopical examinations of the structure of iron and steel, which, in what they reveal, are really astonishing. Judging from what he has already achieved, it may be said that hitherto nothing has been known of the structure of iron and steel; for by his method of investigation he sees particulars and peculiarities whose existence has never been suspected. Mr. Sorby's reputation as an investigator of the microscopical structure of minerals stands deservedly high, but in this new field he bids fair to raise it still higher.

A scheme has been proposed, in the United States, for "laying on" heat in towns and villages, in the same way as gas and water are laid on, from a central source. This heating of all the houses in

a town from one fire would be the perfection of economy, provided that it will cook the food as well as warm those who are to eat it. The scheme, however, is not new; it has been suggested more than once within the present century. We can match it with the proposal of another republican to lay on the piano to as many drawing-rooms as would be willing to pay for the harmonies played on the great central instrument. And we once heard it suggested in Birmingham, that where churches and chapels stand near together, the organ-music might be laid on from one to the other.

Some of the principal jewelers in London have adopted a plan for the prevention or detection of burglary, which is worth notice. They leave a light burning in the shop all night, and cut a small opening in the door-shutter, through which a policeman can look and see that the iron safe stands untouched. Should he find the shop in darkness, that would at once excite suspicion, and he would take measures to raise an alarm, and capture the depredators. Dr. Vander Weyde, of New-York, has invented a gas-whistle which effects the same object in a different way. This instrument can be fixed in any place where gas is used, and is so contrived as to set up a shrill whistle the instant the gas is turned on. By connecting it with an electro-magnetic apparatus a light may be produced at the same moment, the needful contact being accomplished by the opening of a door, putting a key in a lock, or disturbing a shutter or window. The doors of a whole range of shops or warehouses may be connected with it, so that if any one be disturbed the noise of the whistle would alarm the whole neighborhood. It can be used also as a fog-signal, and as a night-light, with the advantage, in the latter case, that by a little contrivance the whistling will begin at any desired hour, and keep on until the person who is to be waked rises and turns off the gas.

A method of stereotyping, by which the cost of metal plates may be greatly reduced—invented also by Professor Vander Weyde—has been mentioned. He prepares the moulds of paper, rendered incombustible by a peculiar process; these moulds are light, and in a dry place will keep for many years. A publisher having a stock of these moulds on hand may cast sixteen or thirty-two plates,

print as many sheets as he wants, then melt the metal, and cast another sheet of plates, and so on, till the whole book is printed. In this way a few pounds of metal suffice, with a great economy of warehouse-room, manipulation, and expense. Another advantage is, that as soon as the pages are composed, in the first instance, with movable type, they need not be kept waiting for the casting, but may be distributed immediately after the moulds are taken.

At a meeting of the American Geographical Society, Dr. R. P. Stevens read a paper on the elevation and subsidence of land in the United States, from which we take a few interesting particulars. It appears that the coast of New-Brunswick and Prince Edward's Island is rising, while that of the Bay of Fundy is sinking. Greenland is slowly sinking along a line of six hundred miles; New-Jersey, and the coasts to the east, are rising; and in the Pacific there is in some latitudes a subsidence of the water. Continuance of these movements will bring about great changes: a projection of the American continent to the North Pole; Hudson's Bay will appear as a fertile valley, with one or more lakes; the banks of Newfoundland will become dry land, and, with St. George's Bank and neighboring shoals, be added to the mainland. Steamers will then cross the Atlantic in four days. The coast-line of all the ocean States will be carried out to the inner edge of the Gulf Stream. The Bahamas, with all their reefs and shoals, will grow into one large island; the Delta of the Mississippi will extend a hundred and fifty miles further into the Gulf, and all down the coast there will be a corresponding lengthening of the rivers, producing remarkable changes of scenery and modifications of climate. Judging from present appearances, we may infer that the more the land is exposed in the north the wider will become the region of barrenness.

It is often argued, especially by political economists and professors of social science, that the present century has fewer prejudices and more enlightenment than any preceding period. Will they tell us how they reconcile the fact under mentioned with their theory? The Metropolitan Board of Works, whose annual report shows what satisfactory progress has been made with respect to extending sewers, advancing the main drainage, re-

naming and re-numbering streets, and preparing for the Thames embankment, had arranged to open the new street in Southwark at the beginning of the year. To have the roadway completed by the required time, they offered piece-work to the paviors, who accepted it, and by working fourteen hours a day earned three times their usual amount of wages. The work was progressing satisfactorily, and the superintending engineer was congratulating himself on the operations of his well-drilled gang, when the council of the Pavior's Society heard of what was going on, went down to the place, and ordered all the men at once to cease piece-

work and go on with day-work only. The order was obeyed, and the work, greatly to the chagrin of the chief, went on at the usual take-it-easy pace.

Now, in this instance, the men had no complaint to make of the "tyranny of capital," for capital was putting into their hands between three and four pounds a week, instead of one pound ten shillings; and yet, with such a tangible means of judging which was most to their advantage, they reject the larger sum, and accept the smaller, in opposition, as it seems, to one of the most powerful of human motives. It is a social phenomenon which requires to be accounted for.

LITERARY MISCELLANIES.

A COMPREHENSIVE TAMIL AND ENGLISH DICTIONARY OF HIGH AND LOW TAMIL. By the Rev. MIRON WINSLOW, D.D., American Missionary at Madras.

We are glad to witness the completion of this great and important work. The *Madras Times* announces it as "a work of prodigious labor and great value, laying not only the British nation but also the whole literary world under great obligation." Other journals of India, Oriental scholars, missionaries, and distinguished official residents, concur in the same opinion. We confess to some national pride in such honor, merited and secured by American scholarship. We are not merely a race of "bustling money-seekers," as we have been deridingly called; we have produced scholars that challenge comparison with those of any country or age. This work of Dr. Winslow's is thoroughly original in plan and execution, and largely so in material, having more than thirty thousand words, never before cognized in Tamil and English lexicography. It includes both the common and poetic dialects, and the astronomical, astrological, botanical, mythological, official, and scientific terms, also the names of authors, poets, heroes, and gods. It contains nine hundred and sixty octavo pages, with three closely-printed columns on a page. The work is printed in Madras, and is executed in the best style of modern typography. We are informed that the work can be seen and ordered at the Mission Rooms, (Bible House,) in New-York, and in Boston. Price ten dollars. To all colleges and theological seminaries, and to Oriental scholars generally, this work is of great value.

LIFE OF EDWARD LIVINGSTON. By CHARLES HAVEN HUNT. With an Introduction by GEORGE BANCROFT. New-York: D. Appleton & Company, 443 & 445 Broadway. 1864.

This eminent publishing house has sent us a copy of this work, beautifully printed and finely executed,

forming a rich addition to American literature, and giving much valuable information of historic interest to the reading public. In the conception and preparation of this Life of Mr. Livingston, Mr. Hunt has done honor to the memory of a great and good man, and exercised excellent judgment in the use of "the whole mass of papers left by Mr. Livingston at his death; a collection, it hardly need be said, of great interest and value, as well, for more general researches" of the historian.

If the public needed further testimony to the value of this Life of Edward Livingston, it is amply furnished from the pen of Mr. Bancroft, the historian, than whom a more competent judge of such a work can scarcely be found. In the introduction to the volume, Mr. Bancroft pays a very high tribute of respect to the name, character, and public services of Mr. Livingston, which will be fully verified by a perusal of the work. No one who reads the introduction will be willing to lay aside the book till he has perused the whole. The author and the publishers have performed a timely service to the country in the issue of this work at this juncture in our national affairs. And many of our public men would find interest and profit in the pages of this work of great practical value. We commend the book to all lovers of American character and history.

MUSIC OF THE BIBLE; OR, EXPLANATORY NOTES UPON THOSE PASSAGES IN THE SACRED SCRIPTURES WHICH RELATE TO MUSIC, INCLUDING A BRIEF VIEW OF HEBREW POETRY. By ENOCH HUTCHINSON. Boston: Gould & Lincoln, 59 Washington-street. New-York: Sheldon & Company. Cincinnati: George S. Blanchard. 1864.

This is a learned work, combining long and patient research in sacred literature and oriental customs. The author claims that "in ancient times the signification of the term *music* was far more comprehensive than it is at present. It included dancing, gesture, poetry, and sometimes the aggregate of all

sciences." Starting with this view, the author marches along in his investigations, with patient step and toil, imparting new information concerning the ancient Scriptures and the meaning of the words there employed. The student of the Bible will find much in this work to interest and instruct him and lead him further into the storehouse of truth, among the precious treasures of wisdom and knowledge which are there laid up.

THE GREAT CONSUMMATION. THE MILLENNIAL REST; OR, THE WORLD AS IT WILL BE. By the Rev. JOHN CUMMINGS, D.D., F.R.S.E., Minister of the Scottish National Church, Crown Court, Covent Garden. Second series. New-York: Carleton, Publisher, 413 Broadway. 1864. Price, \$1.

The name and writings of Dr. Cummings are familiar to many American readers, who will only need the announcement of this volume to induce them at once to purchase and read it. Whenever we spend a Sabbath in London, we turn our steps almost instinctively to the sanctuary where Dr. Cummings preaches, to listen to his instructive eloquence. He is a model preacher. His diction is rich and attractive, as will be seen by every reader of this volume. And we speak of him thus because we doubt not all this language has found utterance in the sanctuary where he preaches. Mr. Carleton has done good service in giving this book to American readers.

DIARY FROM NOVEMBER 18TH, 1862, TO OCTOBER 18TH, 1863. By ADAM GUROWSKI Vol. II. New-York: Carleton, Publisher, 413 Broadway. 1864.

The author makes the following announcement on his title-page, which will indicate to the reader his views and his reasons for writing this book:

"Of all the peoples known in history, the American people most readily forgets yesterday. I publish this diary in order to recall *yesterday* to the memory of my countrymen. GUROWSKI.

"WASHINGTON, October, 1863."

The reader will find in this volume a spicy, amusing, and racy record of current events concerning public men and measures, matters and things, which will make him smile even if some things displease him in the perusal.

JUST PUBLISHED: "A fascinating, entertaining, and useful book!" *Rambles among Words: Their Poetry, History, and Wisdom.* By William Swinton. Revised edition. "It is a book to be studied with profit, and read for pastime." Handsomely printed on tinted-laid paper, and tastefully bound in cloth; one volume, 12mo, price \$1.50. Sent by mail, free of postage, on receipt of price, by Dion Thomas, publisher, 142 Nassau-street, New-York.

POLISH EXILES.—The *Siècle* publishes a letter from a young Polish physician who was sentenced to transportation to Siberia by the Governor of Warsaw. He states that the political prisoners transported with him accomplished the journey as far as Nijni Novgorod in sledges, whence they proceeded on foot to Perm, a distance of two hundred and fifty miles, sinking every step into the snow, the thermometer marking thirty degrees under zero. Any prisoner who possessed sufficient means was offered permission to travel in a sledge, on condition that he should take two gendarmes with him, and defray

all the expense, including their pay. This pretended indulgence was a cruel mockery, for there was not one among the exiles possessed of sufficient money to indulge in such luxury.

THACKERAY AND ALBERT SMITH.—The "Lounger at the Clubs," writing in the *London Illustrated Times*, says: "I found the following in a lady's album the other day:

"Mont Blanc is the monarch of mountains,
They crowned him long ago;
But yet they got to put it on
Nobody seems to know.—ALBERT SMITH."

"I know that Albert wrote in a hurry.
To criticise I scarce presume;
But yet methinks that Lindley Murray
Instead of "who" had written *whom*.
"W. M. THACKERAY."

A MASTODON'S tusk, exhumed by a party of salt-miners in Oregon, has recently been contributed to the Cabinet of the Rochester University. The tusk is six inches in diameter at the larger end, and about two and a half inches at the smaller. Its length is about four feet, which is perhaps not more than one half the original.

THE Washington correspondent of the *Worcester Transcript*, who has examined the Internal Revenue returns, says that tobacco pays a tax of \$2,850,000; leather comes next, paying \$1,900,000; then iron, \$1,700,000; and then malt liquor, \$1,500,000. Peddlers pay \$300,000 for their licenses, and those who ride in carriages \$250,000.

LOVE, HONOR, AND OBEY.

Love all on earth that's worthy love,
The beautiful, the good;
Love God in heaven, for His works,
The earth and briny flood;
Love honest hearts wherever found,
In hut or palace hall;
Love those who love thee, those who hate,
Love every one, love all.

Honor the man who, rich in gold,
Gives largely of his store;
Honor the poor who envy not
The rich their glittering ore;
Honor the silver locks of age
And help them on their way;
Honor the forms that gave thee birth,
Living, or in the clay.

Obeys the first of Heaven's commands,
To love thy fellow-man;
Obeys the best of Nature's laws,
To help him, if you can;
Obeys the still small voice within
That bids thee guilt abhor;
Obeys the voice that trembling cries,
"Arise, and sin no more."

A FISH-HATCHING factory is maintained by the French government at Haingue, on the Swiss frontier. Year before last the expense of the establishment was ten thousand dollars, and the crop seventeen million of eggs, chiefly of large fleaby fishes, of which thirty-four per cent. were lost.

RELIC OF THE "ANCIENT MARINER."—An ancient boat, probably of the third century, has been found in a peat moss near Flensburg, in Sleswig, by M. Engelhardt, director of the Museum at that place. An account of it has been inserted by Mr. John Lubbock in the new number of the *Natural History Review*, from which we select a few particulars. This large, flat-bottomed boat is seventy feet in length, three feet deep in the middle, and eight or nine feet wide. The sides are of oak boards, overlapping one another, and fastened together by iron bolts. On the inner side of each board are several projections, which are not separate pieces of wood, but are continuous with the boards, and were therefore left when the latter were cut out of the solid timber. Each of these projections has two small holes, through which ropes, made of the inner bark of trees, were passed, in order to fasten the sides of the boat to the ribs. The row-locks are formed by a projecting horn of wood, under which is an orifice, so that a rope fastened to the horn and passing through the orifice leaves a hole through which the oar plays. There appears to have been about fifty pair of oars, of which sixteen have already been discovered. The bottom of the boat was covered by matting. The freight consisted of iron axes, including a socketed celt with its handle, swords, lances, knives, brooches, whetstones, wooden vessels, with, oddly enough, two birch brooms, and many smaller articles. Only those, however, have yet been found which remained actually in the boat, and as in sinking it turned partly over on its side, no doubt many more articles will reward the further explorations which M. Engelhardt proposes to make next summer. It is evident that this interesting boat was sunk on purpose, because there is a square hole about six inches in diameter hewn out of the bottom, and it is probable that in some time of panic or danger the objects contained in it were hidden by the owner, who was never able to recover them. Some time ago, a few yards from the same spot, at Nydam, were found a quantity of arms and ornaments, and also a collection of fifty Roman coins, ranging in date from A.D. 67 to 217. There is little doubt that these belong to the same period as the boat above-mentioned, and, under these circumstances, M. Lubbock thinks that this vessel and its contents may be safely ascribed to the third century.

FINANCES OF FRANCE.—The *Times* says that among the heavy embarrassments which are crowding round the Emperor of the French, there is none so serious in its remote consequences as the state of the finances of France. France requires a loan of 12,000,000 sterling. We know not on what terms she will obtain it, but every one can clearly see that the present is a most inopportune time for such an operation. All Europe has been thrown into confusion by the announcement that the treaties of 1815 are at an end; by the suggestion, from one so well able to realize it, that war is inevitable unless a congress can be convoked; and by the failure, which might easily have been foreseen, to convoke a congress announced without previously consulting the great powers of Europe. All these things tend to act most adversely on the money market, and all these things are the voluntary and spontaneous acts of the French government.

MARY, QUEEN OF SCOTS.—Her large sharp features might perhaps have been thought handsome rather

than beautiful, but for the winning vivacity and high joyous spirit which beamed through them. It has been questioned whether her eyes were hazel or dark gray, but there is no question as to their star-like brightness. Her complexion, although fresh and clear, would seem to have been without the brilliance so common among our island beauties. Her hair appears to have changed with her years from a ruddy yellow to auburn, and from auburn to dark brown or black, turning gray long before its time. Her bust was full and finely shaped, and she carried her large stately figure with majesty and grace. She showed to advantage on horseback, and still more in the dance. The charm of her soft sweet voice is described as irresistible; and she sang well, accompanying herself on the harp, the virginals, and still oftener on the lute, which set off the beauty of her long, delicate white hand.—*Inventories of Mary, Queen of Scots.*

THE QUEEN REFUSING TO BE COMFORTED.—The Queen continues to be oppressed with the terrible loss she sustained in the death of the Prince Consort. The second anniversary of her bereavement was passed, on the 14th inst., in strict seclusion. A religious service took place early in the morning in the Royal Mausoleum, at Frogmore, attended by her Majesty and several of her children, who placed on the tomb wreaths of evergreens and *immortelles*. Her Majesty makes frequent visits to the mausoleum, and the custom, so general in France and other continental countries, of paying those honors to the memory of the departed, seems likely, from this high example, to be introduced in England.—*European Times, Dec. 19th.*

DAVID HUME IN A QUAGMIRE.—Ramsey's recently published *Reminiscences of Scottish Life and Character* contains the following:

"There is a story traditional in Edinburgh regarding David Hume, which illustrates how the peasantry were shocked at persons of infidel principles, and which I have heard it said that Hume himself often narrated. The philosopher had fallen from the path into the swamp at the back of the castle, the existence of which I recollect hearing of from old persons forty years ago. He fairly stuck fast, and called to a woman who was passing, and begged her assistance. She passed on, apparently without attending to the request; at his earnest entreaty, however, she came where he was, and asked him: 'Are ye na Hume the atheist?' 'Well, well, no matter,' said Hume; 'Christian charity commands you to do good to every one.' 'Christian charity here, or Christian charity there,' replied the woman, 'I'll do naething for you till ye turn a Christian yersell—ye maun repeat the Lord's Prayer and the Creed, or faith I'll let ye grope there as I find ye.' The skeptic, really afraid for his life, repeated the required formulas."—*Reminiscences, p. 40.*

IMPORTANT LITERARY DISCOVERY.—The *Temps* says: "An important literary discovery has just taken place in London. MM. Francisque Michel, Professor at the Faculty of Bordeaux, and Edouard Fournier, the writer of the *Chronique* in the *Patrie*, were a few days back in the shop of a London publisher, when the latter mentioned that he had in a corner of his warehouse a bundle of papers forming seven volumes, entirely written by Beaumarchais himself. A rapid examination of this treasure soon convinced these gentlemen of the importance of the

discovery, and the manuscript passed at once into the hands of M. Michel to return to France. How those papers got to England we can not say, but the most probable supposition is that they were taken to London by Beaumarchais himself when he sought refuge there in 1793, against the consequences of the accusation brought against him by Chabot and Lecointre, of having sold arms to the royalists."

A RUSSIAN SUBMARINE BOAT.—Another means of defense is also in course of preparation (at Cronstadt)—a submarine boat of colossal dimensions, in the construction of which about two hundred tons of iron and steel are to be used. It is rapidly progressing toward completion. Great secrecy is being used about this boat. We can, however, say that it is to have engines worked by compressed air, to have a very strong beak, with provision for attaching large cylinders charged with powder to the bottoms of vessels, to be fired by electricity. The parties navigating the vessel will see what they are doing by means of bull's-eyes, and they will be able to regulate the depth at which they swim, generally keeping quite close to the surface. The emperor has not only approved the plans, but some months since signed the decree appropriating about £27,000—say 175,000 silver roubles—for this monster.—*Army and Navy Gazette.*

BE ON GOOD TERMS WITH YOUR PILLOW.—The instant the head is laid on the pillow is that in which conscience delivers its decrees. If it has conceived any evil design, it is surrounded by thorns. The softest down is hard under the restless head of the wicked. In order to be happy, one must be on good terms with one's pillow, for the nightly reproaches it can make must be heard; yet it is never so delicious, so tranquil, as after a day on which one has performed some good act, or when one is conscious of having spent it in some useful or substantial employment.

ALL uncertainty as to the ultimate destination of the head of the beautiful Princess de Lamballe, which was cut off, and carried through the streets of Paris at the end of a pike, during the terror in 1793, has been removed by the publication of a minute of one of the permanent Committee of Sections, from which it appears that the head was buried in the cemetery of the *enfants trouvés*, permission to do so having been obtained by a certain Citizen Jaques.

THE overseers of Harvard College have voted to raise the charge for instruction in the undergraduate department from seventy-five dollars as heretofore to one hundred and four dollars a year. The property which now constitutes the foundation of the university, leaving out of the account the buildings, grounds, and libraries, amounts to \$1,627,466.55.

A SEVERE COMPENDIUM.—The Emperor wishes sometimes to get out of Mexico, but he can't; he as often wishes to conquer it, but he can't; he wishes to deliver Poland, but he can't; on finding which he wishes to conciliate Russia and unite with her in the East against England, but he can't; he is sincerely desirous of getting rid of the burden of the Roman occupation, but he can't; he wants, on the other hand, to conciliate the clergy, but he can't; he wants to be a despot, and when he finds it is impossible to continue the autocratic game, at

which he has played since 1852, he tries to be liberal, but he can't; he wants to be on friendly terms with European powers, but he can't; he wants to get up political capital by putting himself forward as the champion of democracy, but he can't. How have all his projects ended and his dearly-bought glory? At home in moral and financial weakness, and abroad in isolation.—*French paper.*

THERE are nineteen universities in Italy, at which there are fourteen thousand seven hundred and sixty-two students. The cost of these institutions to the government is about four million five hundred thousand francs per annum. The number of students at Naples is about ten thousand, who listen with enthusiastic delight to thirty different lectures on philosophy, all, however, teaching different theories.

A NEW COMET.—Mr. W. T. Lynn, of Greenwich, in a letter to a cotemporary, says: "It may interest your readers to know that a comet, which was discovered on the 28th of December last by Respighi, is rapidly approaching the earth, and will probably become visible to the naked eye. Its nearest approach will be about February 1st, being then eighteen million miles. There appears a high degree of probability that it is identical with a comet observed in 1810, and that its period is, therefore, rather more than fifty-three years."

THE number of horse-races in Great Britain last year was one thousand six hundred and sixty-eight, and the number of the horses entered, one thousand eight hundred and thirty-seven.

EXTRAORDINARY depressions in the moon's disc on the western limb have recently been discovered by the Rev. H. C. Key, and by him communicated to the British Astronomical Society. It appears as if large sections had been cut out of it. Is the moon in a state of change, or have our telescopes increased in power?

THE milkmen of Paris are kept honest by a well-known practice of stopping their cans at the city gates, while an inspector examines their contents. If he finds any milk watered, he kicks over the delinquent can and the contents run into the gutter. Sometimes so much milk is spilled in this way that a stream half a mile long is seen running down the gutters.

THE GOOD QUEEN.—Queen Victoria had the children of the workmen on the Osborne estate assembled at Christmas, where a Christmas tree loaded with presents was arranged. Assisted by members of the royal family, the Queen spent the afternoon in distributing the presents to the children, consisting of wearing apparel, books, toys, etc. Afterwards she gave greatcoats, blankets, etc., to the laboring men and women. A few days before, the Queen dispensed liberally to the blind and paralytic in and around London. The English people are accustomed to the bestowment of charity during the Christmas holidays, and their amiable Queen is giving strength and beauty to the fashion by her bright example. Her sad heart finds comfort in the relief of sorrow and poverty.—*Commercial Advertiser.*

MOUNT VESUVIUS has recently been covered with snow from the base to the summit.

UTILIZATION OF SEAWEED.—At a recent meeting of the Philosophical Society of Glasgow, Mr. E. A. Wunsch read a paper "On the Utilization of Seaweed," illustrated by chemical tables and specimens of plants. He took a rapid glance at the statistics of "kelp," the production of which is now about ten thousand tons per annum, but could be almost indefinitely increased if the difficulties of climate in the drying process could be overcome. The supply of seaweed on our shores is practically inexhaustible, being estimated by one authority at twenty-one million tons per annum; while the present consumption, both for kelp and for green manuring, does not reach one million tons. The wrack cast up on our shores during the winter season, is by far the largest in quantity and the most valuable in quality, and is now proposed to be saved and dried artificially by a contrivance for burning "wet fuel," by which the seaweed itself is made to contribute towards the heat required for drying large quantities of it at a cheap rate, at all seasons of the year. Other mechanical appliances for largely increasing the present supply were suggested.

INTERESTING DISCOVERY.—A London paper of the 16th ult. says: "During the present week there has been found in the Public Record Office, a very curious holograph on paper of the period, which is probably unique, and which contains a song or melody by the celebrated Dr. John Bull, the reputed composer of the National Anthem. And by the way, it may not be generally known that the origin of the words 'God save the King' is to be traced to the watchword and countersign given out in the Lord Admiral's orders on the 10th of August, 1545, 'the watch worde in the nigot shalbe thus: God save King Henrie; thother shall answer: And long to reign over us.' Dr. John Bull was organist to the Queen's Chapel, in the reign of Elizabeth, and on the establishment of Gresham College was elected professor of music. The paper in the national repository just discovered, is signed 'John Bull.' It assuredly preserves to us one of the most interesting examples of English musical notation, and will probably be highly esteemed by all lovers of music, as well as archaeologists and antiquaries."

STONE COFFINS FOR ROYALTY.—The Peterhead *Sentinel* states that a stone has been successfully cut from the Cairngall Granite Quarry at Peterhead, ten feet long, by about seven broad and three and a half deep: it is to be cut into a sarcophagus, to rest on a pedestal. Two cysts are to be cut for the insertion of coffins, and lids left to be cemented down. The body of the late Prince Consort is to occupy one cyst; and we believe it is the express wish of her Majesty that her own remains shall be deposited in the other. The obtaining of this stone has been a work of extreme difficulty—one or two fine blocks having been rejected for flaws. The stone weighs above eighteen tons, and will at once be dressed and polished.

THE TRIAL OF BISHOP COLENZO.—Dr. Colenso has been condemned by the Bishop of Capetown on all the nine charges of heresy preferred against him, with the full concurrence of his two brother bishops on every charge. None of them expressed any real doubt either on the construction of Dr. Colenso's meaning or the meaning of the church formulae, and their judgments were about as much like Dr. Lushington's scrupulously conscientious interpretation as

a sermon is like an Act of Parliament. Dr. Colenso is condemned to be deposed from his office as bishop, and "to be further prohibited from the exercise of any divine office within any part of the metropolitan province of Capetown," unless he recant all the heretical opinions cited from his writings before the 4th day of march next, (or the 16th day of April in Capetown.) The bishop's agent, Dr. Bleek, protested against the legality of the judgment, and gave notice of appeal, and the Bishop of Capetown declined to recognize any appeal except to the Archbishop of Canterbury, and required that to be made within fifteen days.—*London paper, January 30th.*

COMPOUND INTEREST.—In California any stipulated rate of interest is lawful, and the current rates are often fearful. In January, 1861—not yet three years ago—Daniel K. Vance borrowed thirteen hundred dollars of Morris Wise, payable on demand, with compound interest at eight per cent. per month. Not being paid, Wise sued it and obtained a verdict a month ago for the snug sum of one hundred and sixty million dollars! Vance not feeling able to lose so much money, Wise concluded to strike off one hundred and forty million dollars from the amount, and only have judgment entered for the trifle of twenty million dollars.—*California paper.*

TRADE AND NAVIGATION.—The annual statement of the trade and navigation of the United Kingdom with foreign and British possessions for the year 1862 has been issued. The total of the real value of merchandise exported amounted to £166,168,184, and the total of merchandise imported was £225,716,976. The exports show an increase of six and a half millions over that of the year 1861, and the imports an increase of eight and a quarter millions. In the year 1858 the exports were £139,782,779, and the imports £164,583,832.

DETECTIVE PHOTOGRAPHY.—Two soldiers on guard were recently found murdered in St. Petersburg. It was suggested that the eyes of the murdered soldiers should be immediately photographed, in the hope of successfully testing the discovery recently made, when, to the surprise of all, the result was the production of the portraits of two soldiers of the private guard at the palace, on whose breasts were the insignia of the Cross of St. George. The murderers were at once sought out and arrested.

EUGENIE'S WIT.—It is beginning to be the fashion, now that the Empress is just showing the first traces of waning beauty, to speak of her Majesty as possessing an immense fund of wit, a mind of a superior order and of great cultivation. It has just been divulged that her Majesty's favorite poets are Lopez de Vega, Shakspeare, Victor Hugo, and Alfred de Musset. During the skating parties, it happened that the Empress fell more than once; the last day, having fallen several times, a very spiritual *bon mot* is maliciously ascribed to her. Rising, or rather being assisted to rise, she exclaimed good-humoredly, "Ah, well, we must learn to do everything; it may be useful even to learn to fall."—*Paris letter, in New-York World.*

THE NEW KING OF THE SANDWICH ISLANDS. Kamehameha V., is thirty-three years old. In 1849 he visited the United States, England, and France, and two years ago traveled through California.

DISEASES OF OVERWORKED MEN.—Time was when the very phrase, diseases of overworked men, would have been considered foolish and out of the question. Now it conveys a truth of national importance, which the nation must consider. From being a comparatively idle world, we have of late become an insane world on the subject of labor. So long as the muscles merely were employed, so long little harm was done; we remained men; now we aspire to be gods, and we pay the forfeit of our ambition. From overwork we now get a class of diseases the most prolonged, the most fatal. The sons of our best men go down at noon, and so accustomed are we to the phenomenon that we cease to regard it as either strange or out of place. It is through the mind, now, that the body is destroyed by overwork; at all events, it is so mainly. The men of intense thought—men of letters, men of business who think and speculate, men of the state who are ambitious to rule, these men are sacrifices. With them, the brain has not merely to act on its own muscles, bidding them perform their necessary duties, but the one brain must needs guide a hundred other brains, and all the muscles thereto appended. An electric battery works a single wire from the city to Brighton, and does its work well, and goes on for some months before it is dead or worn out. Can it do the work of a hundred wires? Oh, yes it can, but it must have more acid, must wear faster, and will ultimately die sooner. We may protect the plates, make the battery to an extent self-regenerative as the body is, but in the main the waste is in excess of the supply, and the wear is as certain as the day. Men of letters, men of business who do their business through other hands and do great business, and men immersed in politics, suffer much the same kind of effects from overwork. They induce in themselves, usually, when they suffer from this cause, one or the other of the following maladies: Cardiac melancholy, or broken heart; dyspepsia, accompanied with great loss of phosphorus from the body; diabetes, consumption, paralysis, local and general; apoplexy, insanity, premature old age. They also suffer more than other men from the effects of ordinary disorders. They bear pain indifferently, can tolerate no lowering measures, are left long prostrated by simple depressing maladies, and acquire in some instances a morbid sensibility which is reflected in every direction; so that briskness in action becomes irritability; and quiet seclusion moroseness. They dislike themselves and feel that they must be disliked, and if they attempt to be joyous they lapse into shame at having dissembled, and fall again into gloom.—*Dr. Richardson, in Social Science Review.*

ANTEDILUVIAN INHABITANTS.—We have to record a singular discovery just made in the department of the Hérault, and which derives additional interest from the question about the antiquity of man, which is still being debated by geologists with great ardor. It appears that some men employed in a stone quarry contiguous to the road which leads from Castries to Ballargues, a few days ago came upon a natural cavern, which seems to have been a burial-place, from the number of human remains found there. Competent men who have since visited this spot concur in the opinion that these skeletons date further back than the visit of the Phœnicians to the coast of France. One thing is certain, that in their time metals were still unknown, and that they consequently lived in the age of stone; for one of the flint implements characteristic of that

age has been found in the same grotto, together with certain small calcareous bodies, like disks, having a hole in the center, and bearing other marks of human ingenuity. These small disks were made up into necklaces like those which are still worn by the South Sea savages. There is one circumstance which is calculated to cast a doubt on the precise age of these skeletons, namely, that none of the bones of the large extinct mammalia have been found in the same grotto. The only bones which have been discovered there are those of the fox, the rabbit, and two reptiles which still exist in the country. It is probable that these bones were washed into the cavern by torrents long after these bodies were buried there; but they might also have belonged to animals that had sought a refuge in the cavern, and by some accident were afterwards unable to leave it. The only organic relic that belongs to a species not existing in the department is a shell of the genus *Paracella*, hitherto only found in France, near La Crau, in the Bouches-du-Rhône; whence it may be inferred that this genus existed at a very remote period in the department of the Hérault. The objects found in this grotto have been preserved by Dr. Delmas, who also directed the researches.—*Galignani.*

THE camels imported for the government six years ago, and since kept near the Tejon reservation on the plains, have increased from fifteen to thirty-seven. They are now removed to Benicia, California. They can easily travel fifty miles a day, but they are not allowed to do more than thirty. One of them has carried four bales of wool or cotton.

QUEEN VICTORIA has undertaken visits of personal inspection to the female departments of the English prisons. The Poole (England) *Herald* has the following announcement:

"On Friday last her Majesty spent considerable time in going over the government prison, the major part of which is occupied by female convicts, and the other part by boy convicts. Attached to the females' prison is a nursery for the children born of convicts since their conviction, and in that department her Majesty remained for some little time. On Monday the Hon. Mrs. Bruce drove to the prison with a present from her Majesty—quite a load of toys for the nursery."

LORD NELSON'S COXSWAIN.—Mr. John Pringle, Lord Nelson's coxswain on board the Victory, died at Newton Bushel, Devon, on the 4th, having attained the extraordinary age of one hundred and three years on the 19th of May last. He had only been ill about a month. Prior to his illness, although he was rather infirm, still his mental faculties were unimpaired, and he used to display those social qualities which so greatly distinguished him in early life. On his birthday for several years past he was in the habit of driving round the town with his wife, and the respected couple were the observed of all observers. He was by birth a Scotchman, having been born in the county of Fife, and on attaining the age of twenty-one, he joined the royal navy. While in the service he took an active part in many of our celebrated naval battles, and among others those of the Nile and Trafalgar. He had a pension granted him, and at the ripe age of ninety-two, he married, and his wife survives him.



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JOHN BRIGHT, M. P.

